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ABSTRACT

The study reported in this document examined the relationship between block scheduling (class periods longer than 50 minutes) and overall student performance. Performance was measured in terms of dropout rates, grade-level retention rates, campus-level results for the Texas Assessment of Academic Skills, and participation in and performance on college admissions tests (SAT and ACT) and Advanced Placement examinations. School context was much more closely related to overall student performance than the particular types of schedules high schools used. When the contextual features and performance measures were considered collectively, the following were found to be associated strongly with overall student performance: average student attendance rate, percentage of economically disadvantaged students, campus enrollment, education service center region, district type, percentage of ethnic minority students, and percentage of ethnic minority teachers. (Contains 58 references. Three appendixes list block and traditional scheduling practices, "1996-1997 District Analyze Category Descriptions," and a "Description of Student Performance by Type of High School Schedule.") (DFR)

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Block Scheduling in Texas Public High Schools

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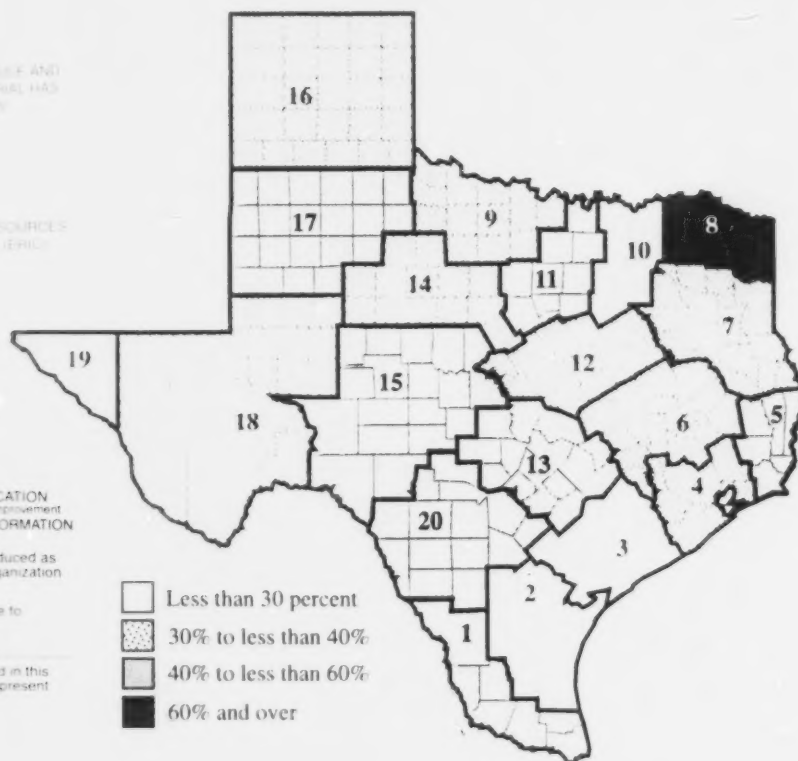
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Block Scheduling in Texas Public High Schools

Executive Summary

Background

The use of block scheduling in high schools has increased dramatically over the last decade. In just the four-year span between 1992 and 1995, the proportion of U.S. high schools on block schedules rose from 4 percent to over 40 percent. Texas has witnessed similar growth in flexible scheduling practices, with 43 percent of public high schools implementing some form of block scheduling during the 1996-97 school year.

Although there are numerous types of block schedules, all are intended to enhance the student learning experience by providing longer periods of instructional time. Proponents of block scheduling claim that it reduces fragmentation of instruction, accommodates more effective teaching practices, and expands opportunities for individualized instruction. Critics, on the other hand, maintain that instructional time over the school year is actually reduced; teacher and student concentration is weakened over a 90-minute period; and learning retention is undermined by gaps between sequential courses that can last more than a year. To date, research on the effects of block scheduling has shown very mixed results in key areas of student performance, including attendance, dropout rates, and test scores.

Texas Study

The study presented in this report examined the relationships between different types of schedules and overall student performance in Texas public high schools. Overall performance was measured in terms of dropout rates, grade-level retention rates, campus-level results for the Texas Assessment of Academic Skills (TAAS), and participation and performance on college admissions tests (SAT and ACT) and AP examinations. Before testing for meaningful performance differences by schedule type, variations in school context features were taken into account.

Findings from this study suggest that school context is much more closely related to overall student performance than the particular types of schedules high schools used. When the contextual features and performance measures were considered collectively, the following characteristics were found to be associated strongly with overall student performance.

- Average student attendance rate for the campus
- Percentage of students enrolled on campus who were economically disadvantaged
- Campus enrollment
- Education service center region
- District type (e.g., urban, rural)
- Percentage of students enrolled on campus who were ethnic minorities
- Percentage of teachers on campus who were ethnic minorities

HIGHLIGHTS:

Introduction to Block Scheduling

Definition of Block Scheduling

Broadly, block scheduling refers to the practice of organizing the school day into larger blocks of time — class periods lasting longer than the traditional 50 minutes.

Selected Forms of Block Scheduling

- **A/B (Alternate Day).** Between six and eight extended classes meet every other day throughout the school year (i.e., half of the classes meet one day, and half meet the following day). A “modified” A/B block schedule usually includes one or two periods that meet every day, in much the same way as a traditional schedule.
- **4 x 4 (Accelerated or Semester).** The standard 180-day school year is divided into two 90-day semesters. Each semester, students attend four 90-minute classes daily.
- **Reconfigured School Year (e.g., 75-75-30 or 75-15, 75-15).** Longer academic terms are combined with shorter terms focused on activities such as student enrichment and remediation.
- **Intensive (e.g., trimester or quarter-on/quarter-off).** Students receive concentrated instruction in a small cluster of related subjects through a series of shorter terms during the school year.

Theoretical Bases for Block Scheduling

Flexible scheduling patterns and fewer classes may help teachers employ more effective pedagogical practices.

Research in cognitive psychology suggests that student learning and long-term memory may be enhanced under conditions present in block scheduling.

By increasing opportunities for individual attention, block scheduling may bolster student motivation.

The degree to which these theoretical benefits are realized in practice is believed to be highly variable, depending in part on the quantity and quality of staff development provided as the schedule changes.

Goals of Block Scheduling

Reduce fragmentation of instruction by creating sufficient time to immerse students in the learning experience and cover material in more depth.

Allow flexibility for varied and creative forms of instruction, such as cooperative learning, interdisciplinary lessons, hands-on exercises, or long-term group or individual projects.

Facilitate individualized instruction to help make learning more personally relevant and accommodate different learning styles and speeds.

Improve the quality of instruction and learning with manageable workloads. Each day, teachers prepare for fewer classes and students, while students concentrate on fewer assignments and tests and less homework.

Minimize effects of student transitions (e.g., movement between classes or locations), such as loss of instructional time or discipline problems.

(Continued from page 1)

What is block scheduling?

The term "block scheduling" broadly refers to innovative school scheduling practices that organize at least part of the school day into larger blocks of time (more than 60 minutes). Introduced in the mid-1960s, the concept is rooted in concerns about creating sufficient time to immerse students in the learning experience. An extended-period schedule contains fewer classes per day, enabling teachers and students to focus more time and energy on each lesson and cover subjects in greater depth (Willis, 1993). The longer periods also accommodate the use of creative teaching methods that seek to enrich and personalize instruction, such as cooperative learning, interdisciplinary lessons, hands-on exercises, and long-term group or individual projects. According to proponents of block scheduling, these techniques help to enhance student motivation and, ultimately, improve academic achievement.

Different Types of School Schedules

Traditional Schedule. The most widely used form of scheduling in the U.S. is the single-period daily schedule. Under this schedule, students attend six, seven, or eight classes each day throughout the school year (see Figure 1 on page 4).

Several basic designs of some of the more commonly used block schedules were identified by Canady and Rettig (1995, pp. 23-27). Descriptions of these schedules follow.

Please note that these are considered *broad types* of block schedules; there are almost as many variations of these as there are schools. For example, the Canady and Rettig (1995) text alone includes approximately 100 diagrams of specific ways block scheduling can be implemented.

A/B (Alternate Day). Students attend between six and eight extended classes that meet every other day throughout the school year (i.e., half of the classes meet one day, and half meet the following day). Under a "modified" A/B block schedule, one or more courses, called singletons, meet daily in the traditional single-period format

(Curry School of Education, University of Virginia, 1997).

4 x 4 (Accelerated or Semester). The standard 180-day school year is divided into two 90-day semesters. Each semester, students attend four 90-minute classes daily. Instruction that had previously stretched over the course of an entire 180-day school year is now compressed into one semester of double-block periods. Generally, teachers instruct three of the 90-minute blocks and use the fourth block for planning. The 4 x 4 plan is a foundation upon which a flexible schedule, designed to meet the particular needs of the school and community, may be built. For example, Advanced Placement (AP), music, or other courses locally determined to be most important may continue to meet every day throughout the school year if this meets the needs of the individual school (Curry School of Education, University of Virginia, 1997).

Reconfigured School Year. This type of schedule (e.g., 75-75-30 or 75-15, 75-15) uses longer, more traditional academic terms in combination with shorter terms that are focused on activities such as enrichment and remediation for students, as well as professional development for teachers.

Intensive. Under trimester, quarter-on/quarter-off, and single-course forms of scheduling, the school year is divided into a series of shorter terms, during which students receive concentrated instruction in one subject or a small cluster of related subjects.

What is the theoretical basis for using longer time blocks for class schedules?

Research in the area of cognitive psychology suggests that learning may be facilitated by the extended periods of instructional time created in block schedules. Nuthall and Alton-Lee (1990) conducted a series of studies about how and what students learn. Among the key findings was that the quantity of academic learning time (defined as the actual time students were engaged with tasks that were understandable and challenging) was closely

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Figure 1.
Different Types of School Schedules

Traditional Single-Period Schedule					
Day	M	T	W	TH	F
P E R I O D	1	1	1	1	1
	2	2	2	2	2
	3	3	3	3	3
	4	4	4	4	4
	5	5	5	5	5
	6	6	6	6	6
	7	7	7	7	7
	8	8	8	8	8

Basic 4 x 4 Block Schedule			
		Semester 1	Semester 2
P E R I O D	1	Course 1	Course 5
	2		
	3	Course 2	Course 6
	4		
	5	Course 3	Course 7
	6		
	7	Course 4	Course 8
	8		

Basic A/B Block Schedule							
DAY		M A	T B	W A	TH B	F A	M B
P E R I O D	BLOCK I	1	2	1	2	1	2
		1	2	1	2	1	2
	BLOCK II	3	4	3	4	3	4
		3	4	3	4	3	4
	BLOCK III	5	6	5	6	5	6
		5	6	5	6	5	6

Modified A/B Block Schedule							
DAY		M A	T B	W A	TH B	F A	M B
P E R I O D	BLOCK I	1	2	1	2	1	2
		1	2	1	2	1	2
	BLOCK II	3	4	3	4	3	4
		3	4	3	4	3	4
	Period 5	5	5	5	5	5	5
	BLOCK III	7	6	7	6	7	6
		7	6	7	6	7	6

Intensive: Quarter-On/Quarter-Off Block Schedule					
		Semester 1		Semester 2	
		Q1	Q2	Q3	Q4
P E R I O D	1	Course 1	Course 5	Course 1	Course 5
	2				
	3	Course 2	Course 6	Course 2	Course 6
	4				
	5	Course 3	Course 7	Course 3	Course 7
	6				
	7	Course 4	Course 8	Course 4	Course 8
	8				

Reconfigured: 75-15-75-15 Block Schedule				
	Fall Term 75 Days	Middle Term 15 Days	Spring Term 75 Days	End Term 15 Days
Block I 112 Min.	Course 1	Electives: Remedial Work; Teacher Training	Course 5	Electives: Remedial Work; Teacher Training
Block II 112 Min.	Course 2		Course 6	
Course 3 + Lunch	Course 3 + Lunch	Course 3 + Lunch	Course 3 + Lunch	Course 3 + Lunch
Block III 112 Min.	Course 4	Electives: Remedial Work; Staff Dev. Cont.	Course 7	Electives: Remedial Work; Staff Dev. Cont.

Note: Figures adapted from *Block Scheduling: A Catalyst for Change in High Schools*, by R. L. Canady and M. D. Rettig, 1995, Princeton, NJ: Eye on Education, Inc.

(Continued from page 3)

related to learning. Under block scheduling, teachers can concentrate their time and resources on 60-80 percent fewer classes and students at any given time. Such teachers also have a good chance of following recommended pedagogical practices (Carroll, 1989, pp. 51-52).

By allowing teachers to cover material in greater breadth and depth, longer amounts of instructional time have also been reported to enhance long-term memory processes. When the material is meaningful to the learner, the brain can more easily associate it with information already in long-term memory. Elaboration (the process of adding information to the material to be learned) facilitates entry of information into long-term memory because it can help learners relate the material to something they already know (Schunk, 1996). If a person is presented with well-organized material under conditions that allow for a high level of individual attention, he or she will learn well, and what is learned well enters long-term memory in an organized manner. As a result, it can be recalled and used more easily.

Another important element of the learning process is motivation; what motivates one student may not motivate others. Responding to students as individuals and providing opportunities to develop self-confidence and self-esteem are considered critical components of educational motivation (National Association of Secondary School Principals, 1987, as cited in Carroll, 1989, p. 54). Block scheduling offers an instructional environment that affords teachers the opportunity to concentrate on individualizing instruction for students (Carroll, 1989, p. 54). Improved motivation may help explain some of the successes reported by nontraditional programs.

Why consider block scheduling?

For the past 150 years, American public schools have held time constant and let learning vary, as if to say to the student, "learn what you can in the time made available." While some bright, hard-working students do reasonably well, the National Education Commission on Time and Learning (1994) points out that other students run into

trouble. In its report titled *Prisoners of Time*, the commission explains that schools will have a design flaw as long as their organization is based on the assumption that all students can learn on the same schedule (p. 13).

Critics of the traditional six- or seven-period school day (such as Carroll, 1994, p. 5) say it produces a hectic, impersonal, inefficient instructional environment. A 1984 study by researchers at Southwest Texas State University showed that, in a 55-minute class, only 28 minutes typically are devoted to instruction (Sommerfeld, 1996). Such a schedule is believed to provide inadequate time for probing ideas in depth and tends to discourage using a variety of learning activities. More importantly, opportunities for individualizing instruction are severely limited under the traditional school schedule. Teachers simply cannot interact each day on a personal level with so many students (Carroll, 1994, p. 5). According to Watts and Castle (1993), traditional, inflexible scheduling is based on meeting administrative and institutional needs at the possible expense of meeting learners' needs. In their view, flexible scheduling patterns are a much better match for pedagogical practices that meet the educational needs of students and the professional needs of teachers.

The National Education Commission on Time and Learning (1994) asserts that the school clock governs how families organize their lives, how administrators oversee their schools, how teachers work through the curriculum, and most significantly, how material is presented and the opportunities students have to comprehend and master it (p. 8). In addition to the dramatic recommendation that the academic day be nearly doubled, the commission went on to offer the following fundamental guidelines for restructuring schools (pp. 3-4).

- Schools should be reinvented around learning, not time.
- Time should become a factor supporting learning, not a boundary marking its limits.

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Table 1.
Intended Goals of Block Scheduling

Issue	Problems Reported Under Traditional Schedule	Possible Remedies Under Block Scheduling ¹
<i>Degree of Continuity in Instruction</i>	Some schools have as many as eight different periods a day. This fragmentation leaves little room for reflection or for building connections between topics. In addition, little time is available for practice or for teaching any subject in depth.	The number of daily classes is reduced for students and teachers. This reduction is intended to give teachers sufficient time to plan for both instruction and learning.
<i>Degree of Personalization of School Environment</i>	The push to get students through six, seven, or eight classes a day does not give students or teachers a chance to develop the personal relationships that foster learning. Teachers may see as many as 180 students in a day, and students must interact with as many as eight different adults each day.	Teachers and students may have more time to develop stronger relationships. School may be a less stressful, more pleasant place in which students may learn and teachers may teach.
<i>Extent of Distractions versus Orderliness</i>	Releasing hundreds, or in some cases thousands, of teens into crowded hallways invites conflicts, which often are carried into the classroom and can waste valuable learning time.	The number of class changes each day is reduced.
<i>Choice in Instructional Methods</i>	In the 43-55 minute periods common to many schools, there is not enough time to start class, end class, and expose students to the curriculum. This is especially true for classes using labs, discussions, and other activities intended to enhance student learning.	Class periods are extended to permit use of a wide array of instructional methods.
<i>Pace of Learning</i>	Not all students learn at the same rate, and the rigid traditional schedule does not allow for students who need extra time. When students fall behind, resulting discipline problems can further diminish teaching time.	Flexibility with regard to time allows for accommodation of individual student learning needs. The number of students who can be accelerated is increased. Opportunities are provided for students to take more courses.

Note: Adapted from Curry School of Education, University of Virginia (1997).

¹ Whether or not remedies are achieved is dependent upon a host of issues. See Table 2 on page 12 for more information about possible consequences associated with block scheduling.

- Schools should reclaim the school day for academic instruction.
- Teachers should be provided the professional time and opportunities they need to do their jobs well.

What are the goals of block scheduling?

Carroll (1994, p. 6) asserts that the "Copernican change" (i.e., fundamental rethinking) in schedules is not an end unto itself. Rather, it is a means to several important ends. The most critical of these are (a) to improve the relationships between teachers and students and (b) to provide teachers and students with much more manageable workloads, which should then result in more successful schools.

Likewise, Canady and Rettig (1995, p. xi) emphasize that the school schedule holds tremendous power to address problems, to successfully implement programs, and to institutionalize effective instructional practices. Their approach to school scheduling focuses not on its mechanics, but instead on the educational and emotional impact of the school schedule on the lives of students and teachers. In Canady's (1990) opinion, the restructuring of schools for increased teacher-directed instructional time is critical if school reform is to result in educational improvement for all students.

Table 1 on page 6 provides a summary of problems commonly associated with traditional academic calendars and the goals of block scheduling that are intended to remedy those problems.

HIGHLIGHTS:

Findings from Previous Research on Block Scheduling

Trends in Use of Block Scheduling

Between 1992 and 1995, use of block scheduling among U.S. high schools rose from 4 percent to over 40 percent.

Texas is consistent with the nation. During the 1996-97 school year, approximately 34 percent of high schools used some form of A/B schedule, 9 percent used some form of 4 x 4 schedule, and 2 percent used some other form of block schedule.

Keys to Effective Implementation of Block Scheduling

Provide teachers sufficient training to acquire strategies and skills needed to teach successfully in large blocks of time. In addition, help teachers apply this knowledge in the classroom by allowing more planning time.

Individualize instruction as much as possible to match different learning needs of students.

Commit to long-term restructuring, with block scheduling as one component of overall school improvement plans. Some researchers suggest it takes a minimum of three years for the transition to extended class periods to result in measurable performance benefits.

Regularly evaluate the program to determine its effects on various educational performance indicators, especially those related to student learning.

Outcomes Associated with Block Scheduling

Before reviewing evaluations of block scheduling programs, the reader should be aware of a number of interpretive cautions (enumerated in the following section) regarding issues such as faithfulness of program implementation, instructional quality and methods, and selection of performance measures and standards.

Studies on block scheduling provide mixed results concerning many student outcomes, including attendance, dropout/graduation rates, and test scores.

Generally, studies show improvements in class grades under block scheduling. One researcher noted that the 4 x 4 schedule, in particular, appears to be more "forgiving" because a student who fails a course one semester can take it the next semester (a "trailer" course) and catch up with his or her same-age peers.

Many schools experience reductions in student behavior problems under block scheduling. At the same time, school climate appears to improve, with better student-teacher relationships and student attitudes.

Most studies report that, under block scheduling, schools are able to offer more course sequences that allow for in-depth study in core academic subjects. Schools are able to maintain breadth of coverage while also increasing depth of coverage of the curriculum.

How common is use of block scheduling?

Kosanovic (1992) states that, in 1992, only 4 percent of high schools in the United States were using some form of block scheduling. However, by 1995, Hackman (1995) and O'Neill (1995) both reported that over 40 percent of U.S. high schools had implemented some version of block scheduling. Roth (1997) estimates that, by 1996-97, some 50 percent of all U.S. high schools had implemented, or were in the process of implementing, block scheduling. One example of this rapid growth comes from North Carolina, where in 1993-94, about 9 percent of the state's high schools were using some form of block schedule. By the next school year (1994-95), this number had almost quadrupled to 34 percent (North Carolina Department of Education, 1997).

The following summary of high school schedules used in Texas during the 1996-97 school year is based on information reported by high schools statewide to the Office of Texas High School Education, Region 13 Education Service Center (1997).

- 275 (22%) of the state's high schools were on A/B schedules, and another 148 (12%) were on modified A/B schedules.
- 123 (8%) were on accelerated block schedules, and another 6 (less than 1%) were on modified block schedules.
- 70 (6%) were on a schedule of six periods per day, 471 (37%) were on a schedule of seven periods per day, and 144 (11%) were on a schedule of eight periods per day.
- 24 (less than 2%) were on some other form of schedule.

What conditions are needed for effective implementation of block scheduling?

Adoption of block schedules and other flexible scheduling policies at the high school level have mushroomed in recent years largely as a result of advocacy by groups such as the Coalition of Essential Schools and the Carnegie Commission on Early Adolescence (Adelman, 1996). It is

important to remember that, while block scheduling offers an opportunity for schools to improve, *changing the schedule alone may not improve student learning*. Effective high school restructuring may require other significant changes to be implemented, with changes in the delivery of instruction the most probable target.

Adequate staff development time is essential for a transition to block scheduling, say Canady and Rettig (1995). Block scheduling is most effective when highly personalized; that is, when students receive instructional delivery matched to their learning needs. Educators who have taught in traditional schedules for years need help acquiring the strategies and skills necessary to teach effectively in large blocks of time. In these researchers' experience, teachers who are most successful in block scheduling typically plan lessons in three parts: explanation, application, and synthesis. Most teachers have much less experience with the latter two phases than the first. In addition, teachers may need training in cooperative learning, class building, and team formation.

A science teacher shared this observation concerning her school's change to block scheduling: "An unexpected result of block scheduling is that it forces teachers to become better at planning, presenting, and reviewing lessons and concepts; a result that benefits the most important people of all — students" (Day, 1995, p. 30).

Roth's (1997) advice to high schools considering block scheduling is "if you are not committed to a 10-year plan of restructuring (including significant staff development, ongoing brainstorming, problem-solving, and modification) then do not implement block scheduling." She points out, for example, that it takes teachers a *minimum* of three years to make the transition to extended class periods. The first year, teachers struggle with, and try out, new techniques and strategies; the second year, they tailor them; and the third year, they polish them.

What results have been reported?

Before reviewing evaluations of block scheduling programs, it is important to consider the following interpretive cautions. First, block scheduling frequently occurs within the broader context of school restructuring. This can make it extremely difficult for evaluators to discern whether any observed changes in performance should be attributed specifically to the block schedule, rather than any other aspects of the restructuring effort.

Second, care should be taken in assessing how various types of block schedules are treated in research projects. Using the label alone to categorize students or schools could mean that vastly different educational experiences are being inappropriately grouped together and compared to "traditional" schedules, making it difficult to know what the observed results might really mean.

Third, the fidelity with which block scheduling is implemented can be a major issue. In theory, one key advantage of block scheduling is that having access to extended periods of time permits much greater variety in task structure and forms of student engagement. Unless such changes in instruction are explicitly supported, perhaps over an extended portion of the school year, there is little reason to anticipate improved student performance.

Fourth, it is always difficult to determine how best to assess the impact of an instructional innovation on student learning. Selection of a performance measure, timing of the measurement, the particular content to be measured, and so on, can all influence the likelihood of being able to detect changes in performance explicitly associated with the particular schedule. Ultimately, different results and conclusions may be reached when the same schedule is assessed with different methodologies or against different standards (whatever the selected "benchmarks" may be).

Given these precautions, combined with the relatively brief period of time in which block schedules have been implemented, it is not surprising that studies to date have reported mixed

results, at best. This review of findings is presented by the types of outcomes reported, including student attendance, test scores, class grades, course completion rates, and discipline rates. Table 2 on page 12 provides a compilation of advantages and disadvantages of block scheduling as discussed by Guskey and Kifer (1995) in their interim report on one Maryland high school.

Attendance/tardiness. West (1996) indicated that there was a constant attendance rate in a Nevada high school after one year of block scheduling. In another high school, Eineder and Bishop (1997) found that, after the first year of block scheduling, the average daily student attendance rate increased from 93.7 percent to 94.7 percent. They also reported a decreased number of student referrals for tardiness. Guskey and Kifer (1995) reported no differences in student daily attendance at a Maryland high school after one and a half years of accelerated block scheduling, as compared to the previous year when traditional schedules were used. Irmsher (1996), in a general review of the effects of block scheduling on Oregon students, reported decreased absenteeism for students who were block scheduled. Mutter, Chase, and Nichols (1997) noted that students found it harder to make up absences in one high school, following its adoption of a block schedule.

In an evaluation of high schools on Copernican plans and/or block schedules, Carroll (1994) reported improved attendance at four schools, two where attendance decreased, and one with no change. Kramer (1997) summarized 10 studies of the effects of block scheduling on student attendance rate and concluded that there were no clear-cut answers about impact on attendance.

Dropout/graduation rates. After less than two years using accelerated block scheduling, a high school reported no differences in dropout rates relative to its performance while on a traditional schedule (Guskey and Kifer, 1995). Eineder and Bishop (1997) reported a decreased annual dropout rate (from 4.6% to 4%) in one high school after block scheduling was implemented. Because there were no comparisons made to similar schools in the district, the observed "improvements" might reflect

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Table 2.
Advantages and Disadvantages of Block Scheduling

	Advantages	Disadvantages
<i>Students Report These Impressions about Block Scheduling</i>	• The opportunity to take more classes and have more options within the program (new format allows for greater diversity in a program of studies and permits students to take more elective courses) • More opportunities for individual attention from teachers • More opportunities to participate in class • Greater diversity in class activities • Fewer subjects to prepare for, and homework that is easier to manage • More time for experiments and projects	• The lack of diversity in class activities offered by some teachers (students claimed that a few teachers "simply do the same boring things longer") • Lack of adequate counseling (students reported needing better guidance in scheduling courses to balance the difficulty of their course loads across semesters) • Ill-prepared substitute teachers (many students reported that substitute teachers were often confused and uncertain about how to handle 90-minute class periods) • Scheduling of Advanced Placement (AP) courses (several students were concerned about taking an AP course during the fall semester because AP testing did not occur until spring)
<i>Educators Report These Impressions about Block Scheduling</i>	• Improved school climate • Better quality work from students • More opportunities for students to engage in group projects • Fewer textbooks needed, resulting in reduced costs • Fewer students per teacher at one time, allowing more individualized attention • More time for collaborative planning • Semester transition helps avoid mid-year slump • Dropouts can reenter at mid-year as new classes are just starting	• Curriculum and course textbooks in many subjects that are not designed for 90-minute classes • The need for more supplies and equipment • Short time between semesters, which makes the transition difficult • Difficulty scheduling AP courses (there was a time lag between teaching and testing) • Pressure to teach differently (need ideas and additional training) • Difficulties associated with student transfers from other schools

Note: Adapted from Guskey and Kifer (1995).

(Continued from page 11)

some general trends present in the district or region, rather than the block schedule, *per se*.

In her review of the effectiveness of block scheduling on Oregon students, Irmsher (1996) reported a decreased dropout rate. Carroll (1994), evaluating changes in dropout rates in six schools using block scheduling, reported that five out of the six reduced their dropout rates between 17 and 63 percent. The median change was a 36-percent reduction in the dropout rate after one year with block scheduling. This reduction was much higher than the 11-percent statewide reduction in Massachusetts' mean dropout rate, even over a three-year period.

Kramer (1997) reported lower dropout rates in most of the eight studies on intensive block scheduling that he reviewed. Carroll (1994) found no clear-cut evidence that alternating-day block scheduling either positively or negatively affected dropout rates.

In a British Columbia high school (Reid, Hierck, and Veregin, 1994), the projected graduation rate increased from 70 percent to 90 percent after one year on a block schedule. W. Reid (1995) also reported that they experienced a large and unexpected *dropin* rate. When students who had already left school found out they could complete a course in a quarter of a year, many returned to school to complete the courses they needed to graduate.

Test scores. Schroth and Dixon (1996) examined Texas Assessment of Academic Skills (TAAS) mathematics scores for low-achieving students at two middle schools. At one school, students were on a traditional schedule; at the other, students had been on a 90-minute block schedule for only one year. The mathematics TAAS scores of the low-achieving students in the block-scheduled classes were not statistically different from those low-achievers in traditional classes.

While Guskey and Kifer (1995) reported no differences overall in student performance on various achievement tests after one and a half years of block scheduling, when disaggregated, the scores of African American students on the Maryland Functional Tests (the state-required testing program in Maryland) had dramatically improved. After one year on alternating block schedules, a slight increase in some standardized test scores was noted in a Nevada high school (West, 1996). Eineder and Bishop (1997) reported one school's experience with block scheduling: no differences in test scores were found between the block schedule and traditional schedule. However, the participants were optimistic because "enabling" indicators, such as attendance and improved behavior, were observed.

Kramer (1996) reviewed eight U.S. and Canadian studies on the effects of block scheduling on student achievement. In two of the studies, conducted in North Carolina and Alabama, respectively (Averett, 1994; Lockwood, 1995), students on semester block schedules achieved as well in algebra and geometry as all-year students, despite having had less instructional time overall as a consequence of block schedules.

The five Canadian studies, as reported by Kramer (1996), all found either that there were no differences in achievement, or that students on block schedules did worse than students on traditional schedules. In Smythe, Stennett, and Rachar (1974), Stennett and Rachar (1973), and Stennett (1985), no differences were reported in mathematics achievement by type of schedule. In Marshall, Taylor, Bateson, and Brigden (1995), students at the end of Grade 10 who were on traditional schedules outperformed those students on semester schedules, who in turn outperformed those on quarter-plan schedules. Raphael, Wahlstrom, and McLean (1986) reported that students on semester block schedules performed significantly worse than students on all-year calendars. Kramer (1996) notes that this last study likely was biased against block schedules because low-ability students may have been excluded from all-year classrooms.

Kramer (1997) raises concerns about the Canadian studies, in general, because lower-ability students were more likely to be in the block-scheduled classes, and at the time of testing, spring block-scheduled students generally had had one month less of instruction than had the year-long students. He also indicated that there has not been enough research on the effects of alternating-day block scheduling on test scores. He found only four such studies: two reported increases in test scores; one reported no change; and another reported a decrease. Of the nine schools that looked at the effects of intensive block scheduling on test scores, Kramer reported that five showed improvement, three showed little or no change, and one showed a slight decrease.

The North Carolina Department of Education (1997) compared 1994-95 end-of-course test scores statewide between students who were block scheduled and those who were not. Across subject areas (without adjusting for student or school differences) students in block-scheduled schools had end-of-course test scores equal to, or slightly higher than, students in schools on traditional schedules. When these analyses were adjusted for students' previous achievement levels, parent educational levels, and homework time, students in block scheduled schools had significantly higher test scores in almost all major subjects than students in traditional schools. The author suggests that these data indicate that block scheduling has the most impact on courses that include students of all achievement levels, and that scheduling has little effect on higher-level and college-bound students. The study also reported that block-scheduled schools were more likely to have a lower parent income level and students who completed less homework.

In examining block scheduling in 10 middle / junior high schools in a large urban district, Russell (1997) reported that block schedules were positively related to student achievement, but the relationships were small, considering the overall influence of past achievement.

In reporting on achievement test scores of students who were or were not block scheduled, Carroll (1994) compared the scores of entering ninth-graders at midyear and at the end of the year. He indicated that students entering the school on a traditional schedule had significantly higher reading scores and somewhat higher mathematics scores than did the students entering the block-scheduled school. Out of 74 comparisons of the two groups' midterm and final exam scores: 49 (66%) showed no differences; 11 (15%) comparisons favored the block-scheduled students; and 14 (19%) comparisons favored the traditional students. The author concluded that, while the students who entered the block scheduling had lower test scores than the other students, after one year the students performed equally well. He also reported an advantage for block-scheduled students in that they had completed 13 percent more courses than had the traditionally-scheduled students.

SAT/ACT. After one year of a trimester block schedule in a large Florida high school, analyses revealed no differences in SAT and ACT test scores for students under this schedule for one year, compared to scores of students from the previous year on a traditional schedule (Geismar and Pullease, 1996).

Advanced Placement (AP). After one and a half years of accelerated block scheduling in a Maryland high school, scores of African American students on AP tests markedly increased (Guskey and Kifer, 1995). Mutter et al. (1997) reported that, for the high school they studied, the AP program was not adequately accommodated in the block schedule. Kramer (1997) reported from a survey of several Georgia schools that about half made accommodations in their block schedules for AP classes, and about half did not.

Course credits/selection. In a study of block scheduling at one high school, researchers reported that more students were able to earn at least six credits in one school year, and that students were able to take new combinations of courses (Mutter et al., 1997). Sturgis (1995) reported that the number of course offerings increased due to block scheduling.

Edwards (1995) and Kramer (1997) reported that, under block scheduling, students could enroll in more core courses, especially mathematics, and take more advanced classes, especially mathematics. Kramer reported on three studies that addressed the concern of teachers and students about the redundancy in content of some mathematics classes once they had been moved to semester courses. When the redundancy was reduced, it became possible to change the course sequence and/or to add new classes. Thus, schools were able to maintain breadth of coverage while also increasing the depth of coverage of the curriculum.

Class grades. In comparing students' grades after one year on a trimester schedule with their grades from the previous year on a traditional schedule, researchers found that students' passing grades had increased by 3.7 percent (Geismar and Pullease, 1996). In another study, one high school (Mutter et al., 1997) reported that, with block scheduling in place, the failure rate decreased in 60 percent of the academic departments, and grade distributions within departments improved. The authors caution that the lowered failure rates and improved grade distributions could reflect a Hawthorne effect rather than genuine improvements (i.e., improvements are associated with the knowledge that results would be studied and reported and not necessarily due to the change in schedule).

In a 1992 pilot study in a Virginia high school, Edwards (1993) reported that, of the 21 students participating in block-scheduled classes, 76 percent improved their achievement over the previous year. In addition, the number of grades that were C's or higher increased by 5 percent over the previous year. While only 3 percent of the school population participated in the pilot, the school failure rate decreased 5 percent, reversing a five-year trend. Schoenstein (1995) noted that, after one year on a 4 x 4 block schedule, a Colorado high school had an increased percentage of students on the honor roll and a decreased failure rate. Shore (1995) reported that, after one year of block scheduling in her California high school, 51 percent of students who had been identified as at risk raised their grade

point averages in each of the next two years, and the list of students identified as at risk was reduced by 50 percent. After one year of implementing the Copernican Plan with block scheduling, a Pennsylvania high school reported improved student grades, with more students on the honor roll and fewer students receiving D's, F's, or Incompletes (Strock and Hottenstein, 1994).

Reid et al. (1994) reported specific grade improvement results based on final exams after implementing a block schedule for one year in their high school. The failure rate decreased in four out of five subjects in the 10th grade, with science showing the largest decrease (13%). In the 11th grade, the failure rate decreased in eight out of nine courses, with the largest drops (8% or more) in English, communications, and chemistry. In the 12th grade, failure rates decreased in six out of nine subject areas, with mathematics and biology showing the greatest declines (36% and 23%, respectively). Overall, the number of students on the honor roll (GPA of 3.0 or higher) increased by 50 percent.

Kramer (1997) reviewed the research literature on student failure rates and block scheduling. He reported that there was no information on failure rates and alternating-day block schedules, although there was good evidence that failure rates had dropped at schools adopting intensive block schedules. He also reported that there was more "forgiveness" in an intensive block schedule, since students who failed a course one semester could take it the next semester and catch up with their same-age peers. Along with information on failure, Kramer found in his review of available studies that the majority reported improved grades in most block-scheduled schools.

Class schedules. In one high school's first year of implementing a block schedule (Mutter et al., 1997), students reported a number of scheduling issues, such as feeling pressure to drop electives in favor of courses required for college. Students and educators at this school wanted to extend the school day after implementing block scheduling because time for extracurricular and other after-school activities had effectively been reduced. In marked

contrast, Kruse and Kruse (1995) reported that flexible block scheduling produced master schedules with greater flexibility and less student isolation.

Discipline. Guskey and Kifer (1995) reported a dramatic reduction in student behavior problems in one high school after one and a half years on an accelerated block schedule. Similarly, Eineder and Bishop (1997) reported decreased discipline referrals; decreased in-school and out-of-school suspensions; and a 40-percent reduction in the number of students involved in fights following implementation of block scheduling. In the Mutter et al. (1997) study of one high school, discipline referrals decreased by 1 percent from the previous year after block scheduling was implemented. This was attributed, at least in part, to the reduced amount of time each school day that students spent changing classes (22 minutes/day less than under the traditional schedule). Irmsher (1996) reported a dramatic drop in disciplinary problems of Oregon high schools using block scheduling. Shore (1995) reported that, after block scheduling was instituted at one school, it had the lowest expulsion rate (one student) and suspension rate in the entire district for the next two years.

Carroll (1994) reported on an evaluation of six schools that adopted block scheduling as part of a larger reform. Of the five schools that had suspension data for two years, four showed a suspension rate decrease ranging from 25 percent to 75 percent, and one had an 11-percent increase in suspensions. Kramer (1997) summarized seven studies on the effects of block scheduling and discipline. In all cases, there were decreases in suspensions and discipline referrals. As stated by Kramer, "A reduction in suspensions and/or discipline referrals goes hand-in-hand with improved school atmosphere at block-scheduled schools" (p. 21).

Satisfaction and school climate. Geismar and Pullease (1996) reported that, after one year of being on a trimester block schedule, teachers, students, parents, and community members preferred that system in their large Florida high school to the former, traditional high school

schedule. After a year and a half of accelerated block scheduling in a Maryland high school, 95 percent of the faculty and 70 percent of the students indicated their preference for the four-period day (Guskey and Kifer, 1995). After one year on an alternating-day block schedule, a Nevada high school surveyed both teachers and students (West, 1996). Fifty-six percent of the students indicated very positive experiences, and 90 percent of the faculty supported the change. Students and teachers reported a calmer school atmosphere and more positive teacher-student relationships.

L. Reid (1995) interviewed 22 teachers and five principals and surveyed 44 students in Colorado about the effects of block scheduling on curriculum and student achievement in English courses. She reported that it was difficult to determine student performance, but the majority of students believed that they had improved in their ability to write. There were no clear patterns in students' perceptions of their overall achievement in English or in their ability to read and understand literature. Students wanted to see the block schedule retained even if their achievement had not improved. Ninety percent of the teachers liked the 90-minute periods due to the less hectic pace.

In surveys of students and parents at two Tennessee high schools, students reported moderate satisfaction with block scheduling (Davis-Wiley and Cozart, 1996). The majority of students were ambivalent about returning to a traditional schedule. Both students and parents expressed concerns about the effects of learning in fast-paced, short time periods (as with traditional schedules). Davis-Wiley and Cozart (1995) also surveyed the teachers and administrators at these two high schools. Staff indicated they did not want to abandon 4 x 4 block scheduling and return to traditional schedules. The staff felt that (a) they had been adequately prepared for the transition, (b) the new schedule required more preparation time, and (c) they used a wider variety of instructional delivery approaches. In another study of perceptions of block scheduling in Tennessee high schools, Fletcher (1996) surveyed 280 teachers and about 2,000 students from six high schools. Both groups generally were satisfied with block

scheduling and reported that the school climate had improved.

In a review of the effects of block scheduling on Oregon students, Irmsher (1996) reported that, generally, there was a more relaxed school atmosphere, improved student attitudes, improved student-teacher relationships, and accelerated student progress. Schoenstein (1995) reported that, in his Colorado high school, block scheduling improved the school climate by reducing school and staff stress (with fewer class changes, a less hectic pace, fewer fights, and less vandalism). After block scheduling and a number of other key changes had been implemented in a California high school, Shore (1995) noted that the school's climate was greatly improved, with students and teachers feeling safer, having fewer discipline problems, and getting to know each other better. Strock and Hottenstein (1994) reported that, a year after implementing the Copernican Plan (with longer scheduled blocks of instructional time) in their Pennsylvania high school, the morale of both students and staff reached its highest level ever.

Hundley (1996) used the Classroom Environment Survey to compare school climate between 30 block-scheduled and 30 traditional classrooms. He reported significant differences favoring the block-scheduled schools. After further analyses, he concluded that this effect was due to positive changes in 12 of the 30 block-scheduled classrooms where teachers had received extensive training in modifying their instruction to make the best use of the longer time. Kramer (1997) summarized the results of several studies comparing school climates before and after block scheduling and reported improved school atmosphere among those adopting either an intensive block schedule or an alternating-day block schedule. He also summarized the results of eight studies that measured student and parent attitudes towards block scheduling and reported the results were overwhelmingly positive. Twelve studies that measured only teacher attitudes about block scheduling generally were positive, with two reporting negative attitudes and one with mixed views.

Training/planning. One science teacher reported that block scheduling "forces teachers to become better at planning, presenting, and reviewing lessons and concepts" (Day, 1995, p. 30). Abdal-Haqq (1996) indicated that contemporary teachers need more time, rather than less, in professional development because what teachers are expected to know and do has increased in amount and intensity. Tanner, Canady, and Rettig (1995) presented different ways that block scheduling could be structured to facilitate more professional development during the school day.

Kramer (1997) and King, Warren, Moore, Bryans, and Pirie (1978) reported evidence that using a lecture mode of instruction does not work well in a longer time block. King et al. reported that those teachers who made major curricular and methodological adjustments and changes in their teaching when going to block scheduling appeared to be far more successful in making the learning experience more rewarding for students. In interviews, teachers who had switched to block scheduling indicated that staff development and training was crucial to successful implementation of block scheduling.

Kramer (1997) also summarized research indicating that teachers saw increased planning time as necessary for successful implementation of block scheduling. Increased planning time was essential to apply what was learned through staff development. Mutter et al. (1997) found that, in one high school using a block schedule, teachers averaged 39 more minutes of planning time than they had had under a traditional schedule.

Costs. Mutter et al. (1997) reported that, while staff and supply costs increased under block scheduling, these costs were offset by the savings in having to purchase fewer textbooks. Canady and Rettig (1993) reported that one school superintendent estimated that using block scheduling in the district's four high schools could save about \$100,000 annually in transportation expenses.

Edwards (1995) reported an interesting side effect of 4 x 4 block scheduling at a Virginia high school. They discovered that the cost of postsecondary education often is about the same as staffing a high school class. In Edwards' words,

Using the school division salary scale, we calculated the per-pupil staffing cost for 24 students (the local community college cap). Dividing annual salary plus fringe benefits by the six periods taught, we found it cost \$4,903 to pay a beginning teacher to teach one high school class. The cost of tuition and books for 24 students in a three-semester hour community college class is \$4,848. . . . Using an average teacher pay of about \$7,200, we came up with an amount of \$300 per pupil. (p. 18)

The school took this money and, rather than using it to hire another high school teacher, gave it to students who were eligible to take college-level courses (in lieu of high school courses). The school's plan was that every eligible student would be able to earn a free year of postsecondary study at accredited institutions, without increasing high school costs for anyone.

General/other. In 1995, the U.S. Department of Education reported on an in-depth study of exemplary elementary and middle schools. These campuses supported high quality learning environments for second-language learners so all students would be successful in school. These schools were characterized by: having extended the school day and school year; managing classroom time to maximize learning time; and using extended blocks of time for learning. Because of the extended time, teachers reported that they were able to offer thematic learning; science experiments and innovative science projects and labs; sustained time for reading and writing activities; and more complex lessons and problem-solving activities. These extended activities enabled the teachers to work more on students' critical thinking and higher-order thinking skills.

In a 1995 study of high schools that were effective in raising the achievement levels of career-bound students, the Southern Regional Education Board cited flexible block scheduling as one of the 40

outstanding practices used in these schools (U.S. Department of Education, 1995).

Kramer (1997) summarized consistent evidence that teachers often covered less material under a block schedule. However, the material frequently was covered in more depth. This pattern seemed especially true of mathematics teachers.

Summary

Block scheduling in U.S. high schools has proliferated over the last decade. While block schedules take a variety of forms, all use extended periods of instructional time in an effort to enhance the learning experience. Critics of the traditional school schedule argue that it fosters an impersonal educational environment marked by disorganization and inefficiency. In contrast, they say, block scheduling is designed to reduce fragmentation of instruction, accommodate more effective teaching practices, and expand opportunities for individualized instruction. These theories are augmented by research in cognitive psychology suggesting that student learning and long-term memory processes may be facilitated under conditions present in block scheduling.

Researchers emphasize that the transition to block scheduling may take several years and requires a substantial commitment to restructuring. If block scheduling is to be effective, adequate staff development must be provided to help teachers acquire instructional strategies and skills appropriate for longer class periods. To date, studies of block scheduling programs have reported mixed results in key areas of student performance.

It is important to keep in mind that block scheduling is a relatively new phenomenon; consequently, it is not yet possible to look at the long-term effects of the practice on student performance. As discussed earlier, block scheduling is almost always part of a larger, systemic restructuring effort in which change in instructional delivery methods is a critical component. The assessment of block scheduling by itself becomes a very difficult task, since it cannot reasonably be examined outside of the larger school context.

HIGHLIGHTS:

Analysis of Block Scheduling in Texas Public High Schools

This study examined different types of high school schedules in light of school context and aggregate student performance. School context factors included district characteristics, campus characteristics, and student demographics. Performance was measured in terms of campus-level TAAS results, SAT/ACT and AP participation and performance, and dropout rates.

As with any study, this one had a number of limitations the reader should keep in mind when reviewing results.

Substantial pre-existing differences in contextual characteristics coincided with the types of schedules high schools in the study reported using during the 1996-97 school year.

When a high school's context was taken into account, the type of schedule the school used did not bear a statistically significant relationship to overall student performance. How effectively students and teachers engage in the teaching-learning process appears to matter much more than the length of class periods.

When the contextual factors and performance measures were considered collectively, the following characteristics related significantly to overall student performance.

- Average student attendance rate for the campus
- Percentage of students enrolled on campus who were economically disadvantaged
- Campus enrollment
- Education service center region
- District type (urban, suburban, etc.)
- Percentage of students enrolled on campus who were ethnic minorities
- Percentage of teachers on campus who were ethnic minorities

Of these seven characteristics, attendance was by far the most strongly associated with aggregate student performance.

The study did not attempt to assess all possible benefits or consequences of block scheduling. Some unchecked, but potentially legitimate, reasons for contemplating various types of schedules may include: the frequency of disciplinary incidents, the costs associated with instructional materials, or locally identified learning needs of students.

Methods

The purpose of this study was to investigate the effects of high school scheduling practices on student performance. Schedule information for the 1996-97 school year, as reported by each high school in the state, was obtained from the Office of Texas High School Education, Region 13 Education Service Center (1997). Only high schools that indicated one of the following six types of schedules were included in the analyses: (1) A/B block schedules; (2) modified A/B block schedules; (3) accelerated block schedules; (4) six-period days; (5) seven-period days; and (6) eight-period days. Other schedule variations were generally too few in number to discuss with any reliability.

Before testing for meaningful performance differences between high schools on various types of schedules, district characteristics, school characteristics, and student demographics were examined at the campus level (see Appendices A and B for descriptions of the various district and campus characteristics included). This procedure helped identify school context features that needed to be taken into account because they have consistently been found to relate to student performance.

After controlling for contextual variations, multiple performance measures were analyzed together to look at overall student achievement by schedule type (see Table 3).

Limitations

Every study has limitations that must be kept in mind when reviewing results. This one is no exception. Here are some of the most important limitations on any inferences or conclusions to be drawn from the findings.

Information about the types of schedules being used by high schools is self-reported. There very likely is wide variation in what different high schools might identify as the same type of block schedule. Within current resources, there is no way to validate the accuracy of the data for type of schedule.

Although some research suggests that successful implementation of block scheduling could require as much as three years (Roth, 1997), information regarding program duration (less than three years vs. at least three years) was available for just a slight majority (55.6%) of the 1,070 Texas high schools examined in this study. Preliminary analysis indicated these campuses were less representative across other school context features examined in the study (e.g., ESC region, district type, students characteristics), raising questions about the extent to which results could be generalized. Consequently, data for this study are limited to the high school schedules reported for the 1996-97 school year only. This means that potential differences between schools by type of schedule may not reflect full advantages or disadvantages if the innovation was in its first or second year, rather than being well-established.

The accuracy of the multivariate analysis was checked because complete data (required for multivariate analysis) were available for only 600 (56%) of the 1,070 high schools for which most descriptive data were available. Most rural schools were dropped from the full analysis due to missing data for the AP-related performance measures. Consequently, the multivariate analysis was rerun without the AP measures so that very few schools were excluded. Results of the full analysis were consistent with the analysis that excluded AP measures, boosting confidence in the inferences being made.

The study did not attempt to assess all possible benefits or consequences of block scheduling. Only selected performance measures (those maintained by the Texas Education Agency) were checked for differences that potentially could be attributed to type of schedule. However, there are any number of other benefits or consequences associated with schedule types that school administrators might want to consider. For instance, the frequency of disciplinary incidents, the costs associated with instructional materials, or locally identified learning needs of students might all be among the unchecked, but quite legitimate, reasons for contemplating various types of schedules.

Table 3.
Analysis of Overall Student Performance
in Schools Using Different Types of Schedules

Contextual Characteristics Taken Into Account	Student Performance Measures Examined ^a
• Education service center region • District enrollment as of October 1996 • District type (urban, suburban, etc.) • Campus enrollment as of October 1996 • Percentage of students enrolled on campus as of October 1996 who were economically disadvantaged • Percentage of students enrolled on campus as of October 1996 who were ethnic minorities • Pupil:teacher ratio on campus • Percentage of teachers on campus who were ethnic minorities • Average student attendance rate for the campus in 1995-96	• Percentage of 10th-grade test-takers on campus who passed every Texas Assessment of Academic Skills (TAAS) test taken in spring 1997 • Percentage of test-takers on campus who passed the TAAS reading test in spring 1997 • Percentage of test-takers on campus who passed the TAAS mathematics test in spring 1997 • Percentage of test-takers on campus who passed the TAAS writing test in spring 1997 • Percentage of 1995-96 graduates at the campus level who took either the SAT or ACT • Percentage of 1995-96 graduates at the campus level taking either the SAT or ACT who scored at or above criterion on either test • Percentage of students on campus who took one or more Advanced Placement (AP) exams in 1996-97 • Percentage of test-takers on campus who scored 3 or higher on AP exams in 1996-97 • Grade-level retention rate for 1995-96 • Campus dropout rate for 1995-96

Note: Data for 1995-96 were used when this was the most recent year of data available at the time of analysis.

^a Comparable improvement quartiles and the percentages of students completing advanced courses were also examined, but these measures were not included in the analysis due to the large number of cases with missing data.

Findings

School context features (selected district characteristics, campus characteristics, and student demographics) appear to be much more closely associated with overall student performance than the types of schedules used by high schools.

Viewed in isolation, or without regard for potential

complicating factors, student achievement on individual performance measures often varied by schedule type (see Appendix C). However, when school context was held constant and multiple performance measures were examined at the same time, these differences disappeared.

This does not preclude describing observed performance on the various measures. It simply means the reader must not attribute too much importance to variations in results associated with different types of high school schedules.

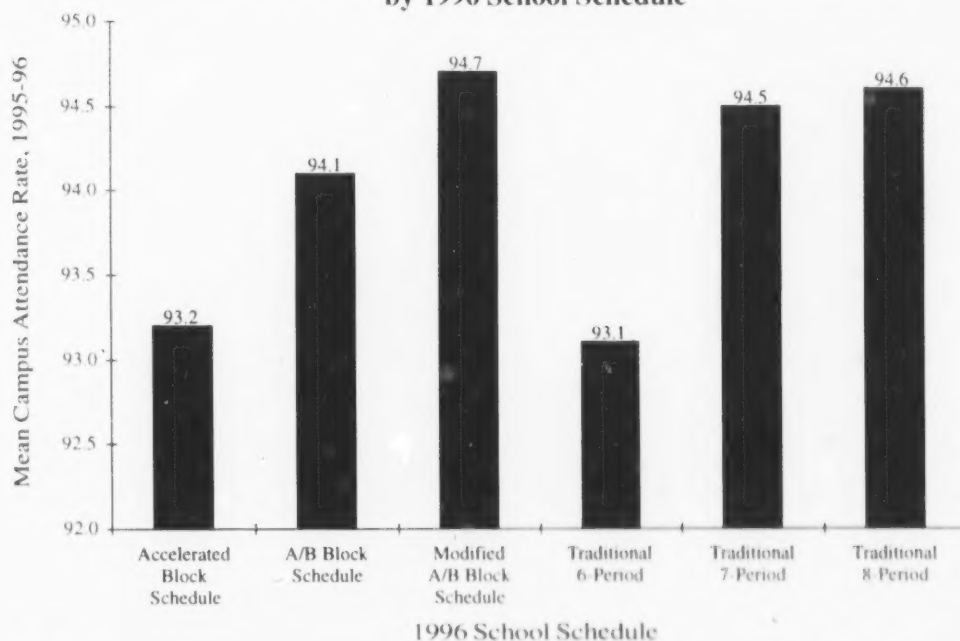
Perhaps one of the most important observations to be made is that there were substantial pre-existing differences among the high schools that coincided with the types of schedules being used (see page 23 and the descriptive summaries in Appendices A and B). For example, schools on accelerated block schedules were remarkably different from other high schools in the state. Conversely, schools using other types of schedules were systematically different from those on accelerated block schedules. These differences are important to consider in any impact assessment of high school schedules because they highlight contextual characteristics often found in research to relate to student performance.

Results from this study indicate that the following contextual factors were significantly related to aggregate student performance.

- Average student attendance rate for the campus
- Percentage of students enrolled on campus who were economically disadvantaged
- Campus enrollment
- ESC region
- District type (urban, suburban, etc.)
- Percentage of students enrolled on campus who were ethnic minorities
- Percentage of teachers on campus who were ethnic minorities

(Continued on page 24)

Figure 2.
Mean Campus Attendance Rates for the 1995-96 School Year
by 1996 School Schedule



Source: Office of Texas High School Education, Region 13 Education Service Center, survey of Texas public high school schedules; Texas Education Agency (TEA) Public Education Information Management System (PEIMS), 1995-96.

Pre-existing Contextual Differences Between High Schools Using Various Types of Schedules

Over half of the high schools using accelerated block schedules were in four of the 20 ESC regions of the state: 21 percent in Region 1 (Edinburg), 13 percent in Region 11 (Ft. Worth), 12 percent in Region 4 (Houston), and just under 10 percent in Region 20 (San Antonio). These same regions contained about 31 percent of all high schools in the state in 1996-97.

In contrast, one-fourth of high schools on seven-period days were in two ESC regions (7 – Kilgore and 10 – Richardson), though these same two regions contained only about 16 percent of all high schools in the state.

Over half the high schools using six-period days (58%) were in Region 4 (Houston).

Regions 7 (Kilgore), 12 (Waco), 13 (Austin), 17 (Lubbock), and 20 (San Antonio) contained slightly more than half of the high schools using modified A/B block schedules, but only about 31 percent of all high schools statewide.

Relatively large districts were most likely to have high schools using accelerated block schedules or six-period days. For example, the 77 largest school districts (7%) in the state in 1996-97 – each having total student enrollments of at least 10,000 – contained over half (52%) of the high schools on accelerated block schedules that year and 86 percent of those on six-period days. About one-third of all high schools statewide were in those same 77 districts.

In contrast, about 68 percent of modified A/B block schedule high schools were in the 685 smallest districts in the state. These districts each had total student enrollments of 1,599 students or less, and they contained 40 percent of all high schools in the state in 1996-97.

Relatively poor districts were more likely than others to have high schools on accelerated block schedules. About 44 percent of high schools using block schedules in 1996-97 were among the 30 percent of districts having the lowest wealth in the state (311 districts with wealth less than or equal to \$102,416). A little more than one-fourth of all high schools in the state were located in these low-wealth districts.

About 59 percent of high schools on accelerated block schedules and 63 percent of those using six-period days were in the 272 districts (26%) in the state where half or more of the enrolled students were ethnic minorities. Only about 25 percent of high schools on modified A/B block schedules were in these districts. Statewide, about 41 percent of all high schools were in these same 272 districts.

Over 48 percent of high schools on accelerated block schedules and 36 percent of those using six-period days were in the 214 districts with the highest concentrations of poor students – those in which 60 percent or more of the enrolled students were economically disadvantaged. About 26 percent of all high schools in the state were in these same 214 districts.

In contrast, 22 percent of the high schools on A/B block schedules and 20 percent of high schools on modified A/B block schedules were in the 214 districts where 60 percent or more of the enrolled students were economically disadvantaged.

Just over one-third of high schools on accelerated block schedules were located in the 66 districts in the state in which half or more of the faculty members were ethnic minorities. About 12 percent of high schools statewide were in these 66 districts.

About 14 percent of those using six-period days and not quite 7 percent of high schools using A/B block schedules were in districts in which half or more of the teachers were ethnic minorities. Less than 2 percent of high schools on modified A/B block schedules were located in this type of district.

(Continued from page 22)

The strength of the relationship between attendance and student performance warrants further attention because this finding is consistent with previous agency research (e.g., TEA, 1997, 1998) and because student attendance is treated as a performance indicator in the state's accountability system. Statewide, the attendance rate for Grades K-12 was 95.1 percent in 1995-96. Of the schools included in the analysis, high schools on six-period days had the lowest average attendance rate (93.1%), while schools on modified A/B block schedules had the highest average rate (94.7%) (see Figure 2 on page 22). Such variation by schedule type was not found to be statistically significant when other contextual factors were taken into account. *By far, however, attendance was the one school characteristic most consistently related to aggregate student performance across the various types of high school schedules.*

Conclusions

Findings from this study indicate that *school context* plays a significant role in explaining aggregate high school performance. Contextual factors included school size, district type, student body characteristics, staff characteristics, and student attendance rates, among others. Student performance in relation to context and type of schedule was gauged using campus-level TAAS results (all tests taken, reading only, mathematics only, and writing only); SAT/ACT participation and performance; AP participation and performance; dropout rates; and grade-level retention rates. Other measures of performance were merely described.

After controlling for various contextual factors, available data on high school schedules used in Texas public education do *not* systematically explain or account for variation in overall high school student performance. When school context is taken into account, other factors, including *how effectively* students and teachers engage in the teaching-learning process, appear to matter more than the particular length of the class periods.

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Appendix A.
Part 1. *Block Scheduling Practices*
Among Selected Texas Public High Schools by District Characteristics

SCHEDULING APPROACHES AMONG SCHOOLS
IN TEXAS HIGH SCHOOL SCHEDULING SURVEY
BY DISTRICT ANALYZE CATEGORY
(DOES NOT INCLUDE ALTERNATIVE CAMPUSES,
SP ED CAMPUSES OR GR 9 ONLY CAMPUSES)

NBR*DIST	CATEGORY	NUMBER AB BLOCK SCHOOLS BY CATG	PERCENT AB BLOCK SCHOOLS BY CATG	NUMBER MOD AB BLK SCHOOLS BY CATG	PERCENT MOD AB BLOCK SCHOOLS BY CATG	NUMBER ACCEL SCHOOLS BY CATG	PERCENT ACCEL SCHOOLS BY CATG
ENROLLMENT GROUPINGS							
9	OVER 50,000	21	11.05	5	3.70	22	19.30
24	25,000 TO 49,999	14	7.37	7	5.19	17	14.91
44	10,000 TO 24,999	16	8.42	7	5.19	20	17.54
67	5,000 TO 9,999	17	8.95	9	6.67	11	9.65
80	3,000 TO 4,999	18	9.47	5	3.70	16	14.04
135	1,600 TO 2,999	26	13.68	10	7.41	10	8.77
118	1,000 TO 1,599	21	11.05	19	14.07	8	7.02
203	500 TO 999	29	15.26	34	25.19	4	3.51
364	UNDER 500	28	14.74	39	28.89	6	5.26
DISTRICT TYPE							
8	MAJOR URBAN	21	11.05	5	3.70	17	14.91
62	MAJOR SUBURBAN	15	7.89	15	11.11	20	17.54
30	OTHER CENTRAL CITY	21	11.05	1	0.74	20	17.54
84	OTHER CC SUBURBAN	24	12.63	7	5.19	14	12.28
79	INDEPENDENT TOWN	13	6.84	10	7.41	15	13.16
117	NON-METRO FAST GROWING	16	8.42	20	14.81	3	2.63
220	NON-METRO STABLE	36	18.95	24	17.78	16	14.04
444	RURAL	44	23.16	53	39.26	9	7.89
WEALTH (MEDIAN=\$136,792)							
103	UNDER \$73,027	14	7.37	8	5.93	25	21.93
104	\$73,027 TO \$88,886	14	7.37	14	10.37	12	10.53
104	\$88,887 TO \$102,416	19	10.00	8	5.93	13	11.40
104	\$102,417 TO \$118,553	20	10.53	18	13.33	11	9.65
104	\$118,554 TO \$136,791	22	11.58	17	12.59	7	6.14
104	\$136,792 TO \$155,729	18	9.47	14	10.37	8	7.02
104	\$155,730 TO \$185,346	22	11.58	8	5.93	8	7.02
104	\$185,347 TO \$244,657	29	15.26	21	15.56	18	15.79
104	\$244,658 TO \$377,832	21	11.05	16	11.85	9	7.89
103	OVER \$377,832	9	4.74	11	8.15	3	2.63
6	SPECIAL DISTRICTS	2	1.05	0	0.00	0	0.00
WEALTH (ST AVG=\$176,854)							
704	UNDER \$176,854	127	66.84	86	63.70	82	71.93
334	OVER \$176,854	61	32.11	49	36.30	32	28.07
6	SPECIAL DISTRICTS	2	1.05	0	0.00	0	0.00
WEALTH BY EQUAL PUPILS PER GROUP							
31	UNDER \$50,181	2	1.05	0	0.00	11	9.65
64	\$50,181 TO < \$72,095	11	5.79	8	5.93	14	12.28
92	\$72,095 TO < \$86,636	10	5.26	11	8.15	8	7.02
103	\$86,636 TO < \$100,050	22	11.58	9	6.67	15	13.16
104	\$100,050 TO < \$115,113	19	10.00	18	13.33	8	7.02
59	\$115,113 TO < \$124,384	10	5.26	10	7.41	9	7.89
30	\$124,384 TO < \$130,265	11	5.79	3	2.22	3	2.63
40	\$130,265 TO < \$137,893	4	2.11	6	4.44	1	0.88
57	\$137,893 TO < \$148,116	7	3.68	11	8.15	6	5.26
33	\$148,116 TO < \$154,201	9	4.74	3	2.22	1	0.88
61	\$154,201 TO < \$167,341	13	6.84	5	3.70	4	3.51
35	\$167,341 TO < \$178,105	9	4.74	2	1.48	2	1.75
45	\$178,105 TO < \$196,316	4	2.11	5	3.70	4	3.51
31	\$196,316 TO < \$212,906	9	4.74	6	4.44	8	7.02
21	\$212,906 TO < \$224,758	13	6.84	2	1.48	8	7.02
46	\$224,758 TO < \$255,616	9	4.74	12	8.89	0	0.00
14	\$255,616 TO < \$264,842	6	3.16	4	2.96	2	1.75
32	\$264,842 TO < \$308,180	6	3.16	5	3.70	5	4.39
55	\$308,180 TO < \$410,479	10	5.26	4	2.96	2	1.75
85	\$410,479 AND OVER	4	2.11	11	8.15	3	2.63
6	SPECIAL DISTRICTS	2	1.05	0	0.00	0	0.00
TOTAL TAX EFFORT (ST AVG=\$1,4124)							
259	UNDER \$1,2485	29	15.26	30	22.22	15	13.16
260	\$1,2485 TO UNDER \$1,3546	64	33.68	36	26.67	37	32.46
260	\$1,3546 TO UNDER \$1,4551	43	22.63	37	27.41	29	25.44
259	\$1,4551 AND OVER	52	27.37	32	23.70	33	28.95
6	SPECIAL DISTRICTS	2	1.05	0	0.00	0	0.00
M&O EFF. TAX EFFORT (ST AVG=\$1,2360)							
259	UNDER \$1,0777	34	17.89	29	21.48	29	25.44
260	\$1,0777 TO \$1,2030	63	33.16	30	22.22	39	34.21
260	\$1,2031 TO \$1,3395	55	28.95	37	27.41	19	16.67
259	\$1,3396 AND OVER	36	18.95	39	28.89	27	23.68
6	SPECIAL DISTRICTS	2	1.05	0	0.00	0	0.00
1,044	STATE TOTAL	190	100.00	135	100.00	114	100.00

SCHEDULING APPROACHES AMONG SCHOOLS
IN TEXAS HIGH SCHOOL SCHEDULING SURVEY
BY DISTRICT ANALYZE CATEGORY
(DOES NOT INCLUDE ALTERNATIVE CAMPUSES,
SP ED CAMPUSES OR GR 9 ONLY CAMPUSES)

NBR*DIST	CATEGORY	NUMBER AB BLOCK SCHOOLS BY CATG	PERCENT AB BLOCK SCHOOLS BY CATG	NUMBER MOD AB BLK SCHOOLS BY CATG	PERCENT MOD AB BLOCK SCHOOLS BY CATG	NUMBER ACCEL SCHOOLS BY CATG	PERCENT ACCEL SCHOOLS BY CATG
HIGHEST PROPERTY VALUE CATEGORY							
380	RESIDENTIAL	103	54.21	52	38.52	69	60.53
325	LAND	33	17.37	45	33.33	9	7.89
136	OIL AND GAS	12	6.32	21	15.56	8	7.02
197	BUSINESS	40	21.05	17	12.59	28	24.56
6	SPECIAL DISTRICTS	2	1.05	0	0.00	0	0.00
SMALL/SPARSE ADJTMNT (ST AVG=30.0%)							
317	NO SMALL/SPARSE ADJUSTMENT	103	54.21	39	28.89	92	80.70
181	UNDER 22.2%	34	17.89	25	18.52	10	8.77
182	22.2% TO UNDER 31.1%	27	14.21	25	18.52	8	7.02
184	31.1% TO UNDER 36.8%	17	8.95	21	15.56	1	0.88
180	36.8% AND OVER	9	4.74	25	18.52	3	2.63
CEI LEVEL (MEDIAN=1.07)							
160	UNDER 1.05	24	12.63	25	18.52	7	6.14
267	1.05 TO UNDER 1.07	36	18.95	44	32.59	9	7.89
246	1.07 TO UNDER 1.09	31	16.32	30	22.22	11	9.65
150	1.09 TO 1.11	28	14.74	14	10.37	16	14.04
221	1.11 AND OVER	71	37.37	22	16.30	71	62.28
OPERATING COST/PUPIL (ST AVG=\$4,756)							
207	UNDER \$4,480	39	20.53	21	15.56	32	28.07
210	\$4,480 TO \$4,826	62	32.63	31	22.96	24	21.05
209	\$4,827 TO \$5,242	46	24.21	28	20.74	27	23.68
209	\$5,243 TO \$6,133	26	13.68	26	19.26	25	21.93
209	OVER \$6,133	17	8.95	29	21.48	6	5.26
ESC REGION							
38	I EDINBURG	4	2.11	0	0.00	24	21.05
42	II CORPUS CHRISTI	2	1.05	1	0.74	3	2.63
40	III VICTORIA	0	0.00	4	2.96	1	0.88
55	IV HOUSTON	21	11.05	4	2.96	14	12.28
29	V BEAUMONT	7	3.68	2	1.48	3	2.63
56	VI HUNTSVILLE	15	7.89	2	1.48	2	1.75
96	VII KILGORE	10	5.26	13	9.63	9	7.89
48	VIII MT PLEASANT	26	13.68	10	7.41	2	1.75
40	IX WICHITA FALLS	8	4.21	5	3.70	0	0.00
81	X RICHARDSON	10	5.26	7	5.19	2	1.75
77	XI FORT WORTH	22	11.58	2	1.48	15	13.16
78	XII WACO	8	4.21	11	8.15	7	6.14
56	XIII AUSTIN	12	6.32	16	11.85	8	7.02
43	XIV ABILENE	7	3.68	8	5.93	0	0.00
43	XV SAN ANGELO	7	3.68	8	5.93	3	2.63
65	XVI AMARILLO	6	3.16	7	5.19	4	3.51
61	XVII LUBBOCK	8	4.21	10	13.33	4	3.51
33	XVIII MIDLAND	5	2.63	5	3.70	2	1.75
12	XIX EL PASO	1	0.53	0	0.00	0	0.00
51	XX SAN ANTONIO	11	5.79	12	8.89	11	9.65
TAAS: PCT PASSING ALL TESTS TAKEN							
207	UNDER 60.7%	40	21.05	27	20.00	47	41.23
209	60.7% TO UNDER 67.5%	38	20.00	34	25.19	25	21.93
212	67.6% TO UNDER 72.9%	41	21.58	27	20.00	24	21.05
206	73.0% TO UNDER 79.1%	35	18.42	23	17.04	12	10.53
210	79.1% AND OVER	36	18.95	24	17.78	6	5.26
SAT/ACT: PCT TAKING							
241	0% TO UNDER 55%	47	24.74	27	20.00	31	27.19
348	55% TO UNDER 70%	87	45.79	45	33.33	57	50.00
377	70% AND OVER	56	29.47	63	46.67	25	21.93
78	NO GRADUATES	0	0.00	0	0.00	1	0.88
SAT/ACT: PCT AT OR ABOVE CRITERION							
79	NONE MET CRITERION	7	3.68	8	5.93	0	0.00
281	UNDER 10%	50	26.32	36	26.67	52	45.61
377	10% TO UNDER 20%	77	40.53	50	37.04	40	35.09
199	20% TO UNDER 35%	48	25.26	39	29.89	20	17.54
30	35% AND OVER	8	4.21	2	1.48	1	0.88
78	NO GRADUATES	0	0.00	0	0.00	1	0.88
1,044	STATE TOTAL	190	100.00	135	100.00	114	100.00

SCHEDULING APPROACHES AMONG SCHOOLS
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NBR*DIST	CATEGORY	NUMBER AB BLOCK SCHOOLS BY CATG	PERCENT AB BLOCK SCHOOLS BY CATG	NUMBER MOD AB BLK SCHOOLS BY CATG	PERCENT MOD AB BLOCK SCHOOLS BY CATG	NUMBER ACCEL SCHOOLS BY CATG	PERCENT ACCEL SCHOOLS BY CATG
DENSITY (ST AVG=13.78 PUPILS/SQ MI)							
506	FEWER THAN 5	57	30.00	69	51.11	15	13.16
306	5 TO FEWER THAN 20	42	22.11	37	27.41	24	21.05
121	20 TO FEWER THAN 100	33	17.37	7	5.19	20	17.54
105	100 AND OVER	56	29.47	22	16.30	55	48.25
6	SPECIAL DISTRICTS	2	1.05	0	0.00	0	0.00
PUPIL CHG:94/95-95/96 (ST AVG=1.91%)							
350	DECLINING PUPILS	58	30.53	50	37.04	22	19.30
327	0% TO UNDER 3%	79	41.58	46	34.07	57	50.00
200	3% TO UNDER 6%	29	15.26	16	11.85	22	19.30
104	6% TO UNDER 10%	16	8.42	14	10.37	12	10.53
63	10% AND OVER	8	4.21	9	6.67	1	0.88
PCT AFRICAN AM PUPILS (ST AVG=14.3%)							
620	UNDER 5%	77	40.53	66	48.89	50	43.86
147	5% TO UNDER 10%	40	21.05	29	21.48	19	16.67
140	10% TO UNDER 20%	31	16.32	20	14.81	23	20.18
66	20% TO UNDER 30%	12	6.32	10	7.41	1	0.88
55	30% TO UNDER 50%	26	13.68	10	7.41	20	17.54
16	50% AND OVER	4	2.11	0	0.00	1	0.88
PCT HISPANIC PUPILS (ST AVG=36.7%)							
231	UNDER 5%	34	17.89	26	19.26	11	9.65
163	5% TO UNDER 10%	31	16.32	16	11.85	9	7.89
206	10% TO UNDER 20%	43	22.63	28	20.74	20	17.54
104	20% TO UNDER 30%	16	8.42	10	7.41	8	7.02
153	30% TO UNDER 50%	38	20.00	30	22.22	20	17.54
187	50% AND OVER	28	14.74	25	18.52	46	40.35
PCT MINORITY PUPILS (ST AVG=53.6%)							
69	UNDER 5%	5	2.63	2	1.48	3	2.63
125	5% TO UNDER 10%	19	10.00	11	8.15	5	4.39
192	10% TO UNDER 20%	32	16.84	31	22.96	10	8.77
156	20% TO UNDER 30%	34	17.89	13	9.63	12	10.53
230	30% TO UNDER 50%	42	22.11	44	32.59	17	14.91
272	50% AND OVER	58	30.53	34	25.19	67	58.77
PCT ECON DISADV (ST AVG=46.88%)							
83	UNDER 20%	14	7.37	10	7.41	10	8.77
127	20% TO UNDER 30%	19	10.00	13	9.63	10	8.77
192	30% TO UNDER 40%	37	19.47	28	20.74	12	10.53
428	40% TO UNDER 60%	78	41.05	57	42.22	27	23.68
157	60% TO UNDER 80%	38	20.00	22	16.30	29	25.44
57	80% AND OVER	4	2.11	5	3.70	26	22.81
AVG. TEACHER EXPER (ST AVG=11.7 YRS)							
261	UNDER 10.2 YEARS	35	18.42	35	25.93	20	17.54
261	10.2 TO UNDER 11.5 YEARS	44	23.16	36	26.67	36	31.58
261	11.5 TO UNDER 12.9 YEARS	67	35.26	39	28.89	28	24.56
261	12.9 YEARS AND OVER	44	23.16	25	18.52	30	26.32
AVG. TEACHER SALARY (ST AVG=\$31,388)							
261	UNDER \$27,972	29	15.26	39	28.89	6	4.39
261	\$27,972 TO UNDER \$29,092	43	22.63	34	25.19	19	16.67
261	\$29,092 TO UNDER \$30,536	47	24.74	27	20.00	24	21.05
261	\$30,536 AND OVER	71	37.37	35	25.93	66	57.89
PCT MINORITY TCHRS (ST AVG=23.9%)							
544	UNDER 5%	77	40.53	60	44.44	23	20.18
208	5% TO UNDER 10%	48	25.26	34	25.19	24	21.05
155	10% TO UNDER 20%	29	15.26	29	21.48	12	10.53
33	20% TO UNDER 30%	9	4.74	3	2.22	9	7.89
38	30% TO UNDER 50%	14	7.37	7	5.19	7	6.14
66	50% AND OVER	13	6.84	2	1.48	39	34.21
% TCHRS W ADV DEGREE (ST AVG=27.3%)							
261	UNDER 14.4%	30	15.79	32	23.70	11	9.65
261	14.4% TO UNDER 21.2%	39	20.53	39	28.89	40	35.09
261	21.2% TO UNDER 28.3%	47	24.74	28	20.74	26	22.81
261	28.3% AND OVER	74	38.95	36	26.67	37	32.46
1,044	STATE TOTAL	190	100.00	135	100.00	114	100.00

Appendix A.
Part 2. *Traditional Scheduling Practices*
Among Selected Texas Public High Schools by District Characteristics

SCHEDULING APPROACHES AMONG SCHOOLS
IN TEXAS HIGH SCHOOL SCHEDULING SURVEY
BY DISTRICT ANALYZE CATEGORY
(DOES NOT INCLUDE ALTERNATIVE CAMPUSES,
SP ED CAMPUSES OR GR 9 ONLY CAMPUSES)

NBR*DIST	CATEGORY	NUMBER TRAD 6 SCHOOLS BY CATG	PERCENT TRAD 6 SCHOOLS BY CATG	NUMBER TRAD 7 SCHOOLS BY CATG	PERCENT TRAD 7 SCHOOLS BY CATG	NUMBER TRAD 8 SCHOOLS BY CATG	PERCENT TRAD 8 SCHOOLS BY CATG
ENROLLMENT GROUPINGS							
9	OVER 50,000	22	37.29	20	4.38	9	7.09
24	25,000 TO 49,999	17	28.81	23	5.03	2	1.57
44	10,000 TO 24,999	12	20.34	18	3.94	9	7.09
67	5,000 TO 9,999	1	1.69	17	3.72	6	4.72
80	3,000 TO 4,999	2	3.39	25	5.47	5	3.94
135	1,600 TO 2,999	2	3.39	68	14.88	11	8.66
118	1,000 TO 1,599	0	0.00	53	11.60	9	7.09
203	500 TO 999	1	1.69	91	19.91	28	22.05
364	UNDER 500	2	3.39	142	31.07	48	37.80
DISTRICT TYPE							
8	MAJOR URBAN	17	28.81	22	4.81	9	7.09
62	MAJOR SUBURBAN	25	42.37	29	6.35	11	8.66
30	OTHER CENTRAL CITY	8	13.56	16	3.50	2	1.57
84	OTHER CC SUBURBAN	2	3.39	32	7.00	5	3.94
79	INDEPENDENT TOWN	2	3.39	21	4.60	11	8.66
117	NON-METRO FAST GROWING	0	0.00	46	10.07	16	12.60
220	NON-METRO STABLE	2	3.39	113	24.73	17	13.39
444	RURAL	3	5.08	178	38.95	56	44.09
WEALTH (MEDIAN=\$136,792)							
103	UNDER \$73,027	3	5.08	48	10.50	12	9.45
104	\$73,027 TO \$88,886	0	0.00	46	10.07	10	7.87
104	\$88,887 TO \$102,416	1	1.69	50	10.94	8	6.30
104	\$102,417 TO \$118,553	0	0.00	37	8.10	11	8.66
104	\$118,554 TO \$136,791	13	22.03	48	10.50	11	8.66
104	\$136,792 TO \$155,729	5	8.47	56	12.25	15	11.81
104	\$155,730 TO \$185,346	6	10.17	45	9.85	22	17.32
104	\$185,347 TO \$244,657	12	20.34	43	9.41	12	9.45
104	\$244,658 TO \$377,832	17	28.81	40	8.75	15	11.81
103	OVER \$377,832	2	3.39	40	8.75	10	7.87
6	SPECIAL DISTRICTS	0	0.00	4	0.88	1	0.79
WEALTH (ST AVG=\$176,854)							
704	UNDER \$176,854	24	40.68	317	69.37	84	66.14
334	OVER \$176,854	35	59.32	136	29.76	42	33.07
6	SPECIAL DISTRICTS	0	0.00	4	0.88	1	0.79
WEALTH BY EQUAL PUPILS PER GROUP							
31	UNDER \$50,181	1	1.69	16	3.50	6	4.72
64	\$50,181 TO < \$72,095	2	3.39	27	5.91	6	4.72
92	\$72,095 TO < \$86,636	0	0.00	47	10.28	8	6.30
103	\$86,636 TO < \$100,050	1	1.69	43	9.41	8	6.30
104	\$100,050 TO < \$115,113	0	0.00	40	8.75	10	7.87
59	\$115,113 TO < \$124,384	1	1.69	22	4.81	8	6.30
30	\$124,384 TO < \$130,265	3	5.08	11	2.41	3	2.36
40	\$130,265 TO < \$137,893	9	15.25	28	6.13	4	3.15
57	\$137,893 TO < \$148,116	3	5.08	26	5.69	6	4.72
33	\$148,116 TO < \$154,201	0	0.00	22	4.81	6	4.72
61	\$154,201 TO < \$167,341	4	6.78	26	5.69	9	7.09
35	\$167,341 TO < \$178,105	4	6.78	13	2.84	11	8.66
45	\$178,105 TO < \$196,316	5	8.47	20	4.38	10	7.87
31	\$196,316 TO < \$212,906	0	0.00	12	2.63	3	2.36
21	\$212,906 TO < \$224,758	6	10.17	11	2.41	2	1.57
46	\$224,758 TO < \$255,616	2	3.39	13	2.84	2	1.57
14	\$255,616 TO < \$264,842	3	5.08	11	2.41	3	2.36
32	\$264,842 TO < \$308,180	10	16.95	11	2.41	3	2.36
55	\$308,180 TO < \$410,479	4	6.78	24	5.25	9	7.09
85	\$410,479 AND OVER	1	1.69	30	6.56	9	7.09
6	SPECIAL DISTRICTS	0	0.00	4	0.88	1	0.79
TOTAL TAX EFFORT (ST AVG=\$1.4124)							
259	UNDER \$1.2485	1	1.69	105	22.98	29	22.83
260	\$1.2485 TO UNDER \$1.3546	15	25.42	130	28.45	33	25.98
260	\$1.3546 TO UNDER \$1.4551	9	15.25	117	25.60	32	25.20
259	\$1.4551 AND OVER	34	57.63	101	22.10	32	25.20
6	SPECIAL DISTRICTS	0	0.00	4	0.88	1	0.79
M&O EFF. TAX EFFORT (ST AVG=\$1.2360)							
259	UNDER \$1.0777	2	3.39	113	24.73	29	22.83
260	\$1.0777 TO \$1.2030	13	22.03	112	24.51	35	27.56
260	\$1.2031 TO \$1.3395	29	49.15	121	26.40	33	25.98
259	\$1.3396 AND OVER	15	25.42	107	23.41	29	22.83
6	SPECIAL DISTRICTS	0	0.00	4	0.88	1	0.79
1,044	STATE TOTAL	59	100.00	457	100.00	127	100.00

SCHEDULING APPROACHES AMONG SCHOOLS
IN TEXAS HIGH SCHOOL SCHEDULING SURVEY
BY DISTRICT ANALYZE CATEGORY
(DOES NOT INCLUDE ALTERNATIVE CAMPUSES,
SP ED CAMPUSES OR GR 9 ONLY CAMPUSES)

NBR*DIST	CATEGORY	NUMBER TRAD 6 SCHOOLS BY CATG	PERCENT TRAD 6 SCHOOLS BY CATG	NUMBER TRAD 7 SCHOOLS BY CATG	PERCENT TRAD 7 SCHOOLS BY CATG	NUMBER TRAD 8 SCHOOLS BY CATG	PERCENT TRAD 8 SCHOOLS BY CATG
HIGHEST PROPERTY VALUE CATEGORY							
300	RESIDENTIAL	46	77.97	169	36.98	42	33.07
325	LAND	2	3.39	128	28.01	50	39.37
136	OIL AND GAS	1	1.69	57	12.47	11	8.66
197	BUSINESS	10	16.95	99	21.66	23	18.11
6	SPECIAL DISTRICTS	0	0.00	4	0.88	1	0.79
SMALL/SPARSE ADJUSTMNT (ST AVG=30.0%)							
317	NO SMALL/SPARSE ADJUSTMENT	55	93.22	149	32.60	41	32.28
181	UNDER 22.2%	2	3.39	85	18.60	14	11.02
182	22.2% TO UNDER 31.1%	0	0.00	77	16.85	26	20.47
184	31.1% TO UNDER 36.8%	2	3.39	98	21.44	17	13.39
180	36.8% AND OVER	0	0.00	48	10.50	29	22.83
CEI LEVEL (MEDIAN=1.07)							
160	UNDER 1.05	1	1.69	65	14.22	16	12.60
267	1.05 TO UNDER 1.07	1	1.69	113	24.73	28	22.05
246	1.07 TO UNDER 1.09	0	0.00	110	24.07	26	20.47
150	1.09 TO 1.11	4	6.78	51	11.16	29	22.83
221	1.11 AND OVER	53	89.83	118	25.82	28	22.05
OPERATING COST/PUPIL (ST AVG=\$4,756)							
207	UNDER \$4,480	6	10.17	80	17.51	20	15.75
210	\$4,480 TO \$4,826	25	42.37	107	23.41	32	25.20
209	\$4,827 TO \$5,242	22	37.29	90	19.69	24	18.90
209	\$5,243 TO \$6,133	5	8.47	95	20.79	26	20.47
209	OVER \$6,133	1	1.69	85	18.60	25	19.69
ESC REGION							
38	I EDINBURG	1	1.69	20	4.38	1	0.79
42	II CORPUS CHRISTI	1	1.69	25	5.47	5	3.94
40	III VICTORIA	0	0.00	23	5.03	6	4.72
55	IV HOUSTON	34	57.63	30	6.56	6	4.72
29	V BEAUMONT	3	5.08	12	2.63	3	2.36
56	VI HUNTSVILLE	1	1.69	29	6.35	4	3.15
96	VII KILGORE	0	0.00	62	13.57	0	0.00
48	VIII MT PLEASANT	0	0.00	0	0.00	0	0.00
40	IX WICHITA FALLS	0	0.00	25	5.47	2	1.57
81	X RICHARDSON	3	5.08	52	11.38	4	3.15
77	XI FORT WORTH	0	0.00	9	1.97	35	27.56
70	XII WACO	0	0.00	34	7.44	7	5.51
56	XIII AUSTIN	2	3.39	22	4.81	5	3.94
43	XIV ABILENE	0	0.00	21	4.60	3	2.36
43	XV SAN ANGELO	2	3.39	8	1.75	8	6.30
65	XVI AMARILLO	0	0.00	26	5.69	12	9.45
61	XVII LUBBOCK	0	0.00	24	5.25	6	4.72
33	XVIII MIDLAND	3	5.08	14	3.06	4	3.15
12	XIX EL PASO	9	15.25	8	1.75	0	0.00
51	XX SAN ANTONIO	0	0.00	13	2.84	16	12.60
TAAS: PCT PASSING ALL TESTS TAKEN							
207	UNDER 60.7%	22	37.29	110	24.07	32	25.20
209	60.7% TO UNDER 67.5%	9	15.25	99	21.66	11	8.66
212	67.6% TO UNDER 72.9%	10	16.95	92	20.13	28	22.05
206	73.0% TO UNDER 79.1%	6	10.17	77	16.85	32	25.20
210	79.1% AND OVER	12	20.34	79	17.29	24	18.90
SAT/ACT: PCT TAKING							
241	0% TO UNDER 55%	10	16.95	114	24.95	36	28.35
348	55% TO UNDER 70%	23	38.98	167	36.54	40	31.50
377	70% AND OVER	26	44.07	174	38.07	51	40.16
78	NO GRADUATES	0	0.00	2	0.44	0	0.00
SAT/ACT: PCT AT OR ABOVE CRITERION							
79	NONE MET CRITERION	1	1.69	46	10.07	8	6.30
281	UNDER 10%	7	11.86	125	27.35	48	37.80
377	10% TO UNDER 20%	22	37.29	179	39.17	40	31.50
199	20% TO UNDER 35%	21	35.59	89	19.47	26	20.47
30	35% AND OVER	8	13.56	16	3.50	5	3.94
78	NO GRADUATES	0	0.00	2	0.44	0	0.00
1,044	STATE TOTAL	59	100.00	457	100.00	127	100.00

SCHEDULING APPROACHES AMONG SCHOOLS
IN TEXAS HIGH SCHOOL SCHEDULING SURVEY
BY DISTRICT ANALYZE CATEGORY
(DOES NOT INCLUDE ALTERNATIVE CAMPUSES,
SP ED CAMPUSES OR GR 9 ONLY CAMPUSES)

NRB*DIST	CATEGORY	NUMBER TRAD 6 SCHOOLS BY CATG	PERCENT TRAD 6 SCHOOLS BY CATG	NUMBER TRAD 7 SCHOOLS BY CATG	PERCENT TRAD 7 SCHOOLS BY CATG	NUMBER TRAD 8 SCHOOLS BY CATG	PERCENT TRAD 8 SCHOOLS BY CATG
DENSITY (ST AVG=13.78 PUPILS/SQ MI)							
506	FEWER THAN 5	3	5.08	204	44.64	60	47.24
306	5 TO FEWER THAN 20	3	5.08	145	31.73	32	25.20
121	20 TO FEWER THAN 100	4	6.78	40	8.75	12	9.45
105	100 AND OVER	49	83.05	64	14.00	22	17.32
6	SPECIAL DISTRICTS	0	0.00	4	0.88	1	0.79
PUPIL CHG:94/95-95/96 (ST AVG=1.91%)							
350	DECLINING PUPILS	19	32.20	156	34.14	36	28.35
327	0% TO UNDER 3%	27	45.76	164	35.89	45	35.43
200	3% TO UNDER 6%	11	18.64	82	17.94	30	23.62
104	6% TO UNDER 10%	2	3.39	41	8.97	10	7.87
63	10% AND OVER	0	0.00	14	3.06	6	4.72
PCT AFRICAN AM PUPILS (ST AVG=14.3%)							
620	UNDER 5%	16	27.12	248	54.27	86	67.72
147	5% TO UNDER 10%	12	20.34	61	13.35	14	11.02
140	10% TO UNDER 20%	12	20.34	69	15.10	14	11.02
66	20% TO UNDER 30%	5	8.47	34	7.44	3	2.36
55	30% TO UNDER 50%	11	18.64	39	8.53	5	3.94
16	50% AND OVER	3	5.08	6	1.31	5	3.94
PCT HISPANIC PUPILS (ST AVG=36.7%)							
231	UNDER 5%	1	1.69	105	22.98	15	11.81
163	5% TO UNDER 10%	5	8.47	65	14.22	20	15.75
206	10% TO UNDER 20%	17	28.81	80	17.51	25	19.69
104	20% TO UNDER 30%	7	11.86	36	7.88	18	14.17
153	30% TO UNDER 50%	10	16.95	81	17.72	25	19.69
187	50% AND OVER	19	32.20	90	19.69	24	18.90
PCT MINORITY PUPILS (ST AVG=53.6%)							
69	UNDER 5%	0	0.00	32	7.00	8	6.30
125	5% TO UNDER 10%	0	0.00	52	11.38	16	12.60
192	10% TO UNDER 20%	0	0.00	76	16.63	18	14.17
156	20% TO UNDER 30%	6	10.17	59	12.91	22	17.32
230	30% TO UNDER 50%	16	27.12	91	19.91	22	17.32
272	50% AND OVER	37	62.71	147	32.17	41	32.28
PCT ECON DISADV (ST AVG=46.88%)							
83	UNDER 20%	16	27.12	35	7.66	9	7.09
127	20% TO UNDER 30%	3	5.08	51	11.16	20	15.75
192	30% TO UNDER 40%	1	1.69	79	17.29	19	14.96
420	40% TO UNDER 60%	18	30.51	194	42.45	54	42.52
157	60% TO UNDER 80%	20	33.90	77	16.85	22	17.32
57	80% AND OVER	1	1.69	21	4.60	3	2.36
AVG. TEACHER EXPER (ST AVG=11.7 YRS)							
261	UNDER 10.2 YEARS	6	10.17	85	18.60	34	26.77
261	10.2 TO UNDER 11.5 YEARS	14	23.73	109	23.85	23	18.11
261	11.5 TO UNDER 12.9 YEARS	25	42.37	140	30.63	35	27.56
261	12.9 YEARS AND OVER	14	23.73	123	26.91	35	27.56
AVG. TEACHER SALARY (ST AVG=\$31,388)							
261	UNDER \$27,972	1	1.69	105	22.98	24	18.90
261	\$27,972 TO UNDER \$29,092	1	1.69	99	21.66	32	25.20
261	\$29,092 TO UNDER \$30,536	7	11.86	115	25.16	27	21.26
261	\$30,536 AND OVER	50	84.75	130	30.20	44	34.65
PCT MINORITY TCHRS (ST AVG=23.9%)							
544	UNDER 5%	1	1.69	218	47.70	68	53.54
208	5% TO UNDER 10%	17	28.81	79	17.29	21	16.54
155	10% TO UNDER 20%	12	20.34	76	16.63	11	8.66
33	20% TO UNDER 30%	5	8.47	12	2.63	12	9.45
38	30% TO UNDER 50%	16	27.12	34	7.44	11	8.66
66	50% AND OVER	8	13.56	38	8.32	4	3.15
% TCHRS W ADV DEGREE (ST AVG=27.3%)							
261	UNDER 14.4%	2	3.39	107	23.41	36	28.35
261	14.4% TO UNDER 21.2%	1	1.69	107	23.41	32	25.20
261	21.2% TO UNDER 28.3%	29	49.15	109	23.85	35	27.56
261	28.3% AND OVER	27	45.76	134	29.32	24	18.90
1,044	STATE TOTAL	59	100.00	457	100.00	127	100.00

Appendix A.
Part 3. Texas Education Agency
1996-97 District Analyze Category Descriptions

ENROLLMENT

A nine-category grouping based on the total number of students enrolled by district as of the Public Education Information Management System (PEIMS) fall collection date (late October of each year). Enrollment excludes students who are served but not enrolled by districts.

DISTRICT TYPE

Classification of school districts based on factors such as size, growth rates, and proximity to urban areas is listed below. The charter school districts are in a separate category.

Major Urban. The state's largest metropolitan districts serving the Houston, Dallas, San Antonio, Fort Worth, Austin, and El Paso areas.

Major Suburban. Other districts in and around the major urban areas.

Other Central City. Major districts in other large Texas cities.

Other Central City Suburban. Other districts in and around the other large, but not major, Texas cities.

Independent Town. Largest districts in counties with populations of 25,000 to 100,000.

Non-Metro: Fast Growing. Districts not fitting in any of the preceding categories but exhibiting a five-year growth rate of at least 20 percent with at least 300 students enrolled.

Non-Metro: Stable. Districts not fitting in any of the preceding categories but with an enrollment exceeding the state median.

Rural. Districts not fitting in any of the preceding categories; districts either with an enrollment between 300 and the state median and a growth rate less than 20 percent, or with an enrollment less than 300.

Charter Schools. The 16 open-enrollment schools chartered by the State Board of Education for operation during 1996-97. Charter schools operate in facilities of commercial or nonprofit entities or districts.

PROPERTY WEALTH

Total taxable property value divided by enrollment, which indicates district ability to raise local funds on a per pupil basis. The property value used is total taxable value for the last completed calendar year (i.e., 1996) as determined by the Comptroller's Property Tax Division (CPTD). Enrollment is for the 1996-97 school year. The first wealth grouping shows 10 categories; the second simply shows districts above and below state average wealth; the third is a 20-category grouping, with each category representing about 5 percent of the state's students. The six special statutory and 16 charter school districts without taxable property wealth form a separate group in all three wealth groupings.

TOTAL TAX EFFORT

A five-category tax effort grouping of districts defined by the total effective tax rate, which was determined by dividing the last completed calendar year's total levy amount by that year's CPTD total taxable property value. The total effective rate is the sum of the school district maintenance and operations (M&O) rate, and

the interest and sinking fund standardized rate. Rates are expressed per \$100 of taxable value. The fifth category is reserved for the six special statutory and 16 charter school districts without property tax levies.

MAINTENANCE AND OPERATIONS EFFECTIVE TAX RATES

A five-category tax effort grouping of districts showing the M&O effective tax rate, which was determined by dividing the last completed calendar year's M&O levy amount by that year's CPTD total taxable property value. The M&O rates shown include the local standardized rate and money generated by districts for equalizing wealth. The fifth category is reserved for the six special statutory and 16 charter school districts without property tax levies.

HIGHEST PROPERTY VALUE CATEGORY

A CPTD classification based on property use. Thirteen CPTD categories are aggregated into four categories as follows.

Residential. Single-family, multi-family, and residential inventory.

Land. Vacant lots and rural real property (taxable).

Oil and Gas. Oil, gas, and minerals.

Business. Commercial and industrial real property, commercial and industrial personal property, and utilities.

A district is placed into one of the four preceding categories that represents its greatest total property value. The six special statutory and 16 charter school districts without taxable property wealth form a separate group.

SMALL/SPARSE ADJUSTMENT

A five-category grouping of districts based on the small/sparse adjustment amount as a percentage of the total adjusted basic allotment amount. This percentage represents the extent to which state funding is adjusted to compensate for small and/or sparsely populated districts. The fifth category is reserved for districts receiving no small/sparse adjustment.

COST OF EDUCATION INDEX LEVEL

A five-category grouping of districts based on the Cost of Education Index (CEI) level. It reflects geographic variations in costs and prices outside district control. The current index, which has a minimum value of 1.0 and a maximum of 1.2, was implemented in 1991-92.

OPERATING COST PER STUDENT

A five-category grouping of districts based on operating cost per student. Operating costs are the sum of all expenditures budgeted for the operation of the district for all funds. The operating expenditures are a subset of the total expenditures; they do not include debt service, capital outlay, or ancillary services expenditures. Per student amounts are the current school year expenditures divided by enrollment. The source for budgeted expenditures is the fall PEIMS submission.

EDUCATION SERVICE CENTER REGION

The state is divided into 20 geographic regions; districts within each region are served by an education service center.

TAAS: PERCENT PASSING ALL TESTS TAKEN

A six-category grouping of districts based on the percentage of students passing the Texas Assessment of Academic Skills (TAAS). For Grades 3-8 and 10, the total number of students passing all sections taken of

the TAAS is expressed as a percentage of the total number of students taking one or more tests. This percentage (a) excludes students taking the test in Spanish and special education students; and (b) includes only those students in the district in October of the school year, which is the percentage used for accountability purposes. The sixth category is reserved for districts not administering the test.

SAT I/ACT: PERCENT TAKING

A four-category grouping based on the percentage of 1995-96 graduates taking the SAT I and/or the ACT Assessment. The fourth category is reserved for districts that had no graduates.

SAT I/ACT: PERCENT SCORING AT OR ABOVE CRITERION

A six-category grouping based on the percentage of 1995-96 examinees who scored at or above the criterion (1110 on the SAT I Total and/or 24 on the ACT Composite) on the SAT I and/or ACT. The number meeting the criterion is divided by the number of examinees. The sixth category is reserved for districts that had no examinees.

STUDENT DENSITY

A five-category grouping based on density, or the number of students enrolled per square mile. District square miles were determined through a joint effort by the State Property Tax Board (SPTB, now the CPTD), the Texas Education Agency (TEA), and the Texas Water Commission (TWC). Maps provided by districts to the SPTB were digitized by TWC to determine acreage. The fifth category is reserved for the six special statutory and 16 charter school districts without available mileage information.

ENROLLMENT CHANGE FROM PRIOR YEAR

A five-category grouping based on the growth or decline in district student population over a one-year period. Districts with declining enrollment represent one category, while the remaining categories show one-year growth rates ranging from "0%-3%" to "10% and over."

PERCENT AFRICAN AMERICAN, HISPANIC, AND MINORITY STUDENTS

Three six-category sets of groupings based on the ethnic composition of district student populations, as reported on PEIMS. Minority percent is calculated as the sum of all non-White populations expressed as a percentage of the total. Non-White populations include American Indian or Alaskan Native; Asian or Pacific Islander; African American, not of Hispanic origin; and Hispanic.

PERCENT ECONOMICALLY DISADVANTAGED STUDENTS

A six-category grouping based on the percentage of students enrolled in the district who are classified as economically disadvantaged on PEIMS as follows:

- a) eligible for free or reduced-price meals under the National School Lunch and Child Nutrition Program;
- b) from a family with an annual income at/below the federal poverty line;
- c) eligible for Aid to Families with Dependent Children (AFDC) or other public assistance;
- d) recipient of a Pell Grant or comparable state need-based financial assistance program; or
- e) eligible for programs assisted under Title II of the Job Training Partnership Act.

AVERAGE TEACHER EXPERIENCE

A four-category grouping of average teacher experience years computed as the total professional experience years for each district teacher multiplied by each teacher's full-time-equivalent (FTE) count, followed by summing these products for the whole district, and dividing by the total teacher FTE count.

APPENDIX A

AVERAGE TEACHER SALARY

A four-category grouping by average district teacher salary computed as the total salary of teachers divided by the total teacher FTE count. Total salary amount does not include any other supplement.

PERCENT MINORITY TEACHERS

A six-category grouping based on the minority composition of district teaching populations. Minority percentage is calculated by summing all non-White teacher FTE's and dividing by the total teacher FTE's.

PERCENT TEACHERS WITH ADVANCED DEGREES

A four-category grouping by district percentage of teachers with advanced degrees computed as the FTE count of teachers with master's or doctoral degrees divided by the total teacher FTE count.

Appendix B.
Part 1. *Block Scheduling Practices*
Among Selected Texas Public High Schools by Campus Characteristics

SCHEDULING APPROACHES AMONG SCHOOLS
IN TEXAS HIGH SCHOOL SCHEDULING SURVEY
BY CAMPUS ANALYZE CATEGORY
(DOES NOT INCLUDE ALTERNATIVE CAMPUSES,
SP ED CAMPUSES OR GR 9 ONLY CAMPUSES)

NBR*CAMP	CATEGORY	NUMBER AB BLOCK SCHOOLS BY CATG	PERCENT AB BLOCK SCHOOLS BY CATG	NUMBER MOD AB BLK SCHOOLS BY CATG	PERCENT MOD AB BLOCK SCHOOLS BY CATG	NUMBER ACCEL SCHOOLS BY CATG	PERCENT ACCEL SCHOOLS BY CATG
CAMPUS TYPE							
3,588	ELEMENTARY SCHOOLS	0	0.00	0	0.00	0	0.00
1,261	MIDDLE & JR. HIGH SCHOOLS	0	0.00	0	0.00	0	0.00
1,393	HIGH SCHOOLS	171	98.48	112	83.58	108	96.43
401	K - 12 SCHOOLS	18	9.52	22	16.42	4	3.57
CAMPUS ACCOUNTABILITY RATING							
394	EXEMPLARY	8	4.23	5	3.73	0	0.00
1,309	RECOGNIZED	41	21.69	31	23.13	11	9.82
4,127	ACCEPTABLE	124	65.61	92	68.66	89	79.46
108	LOW-PERFORMING	16	8.47	6	4.48	12	10.71
309	ALTERNATIVE EDUCATION	0	0.00	0	0.00	0	0.00
396	NOT-RATED	0	0.00	0	0.00	0	0.00
AVG. TEACHER EXPER (ST AVG=11.7 YRS)							
1,299	UNDER 9.3 YEARS	22	11.64	19	14.18	4	3.57
1,299	9.3 TO UNDER 10.9 YEARS	21	11.11	34	25.37	16	14.29
1,299	10.9 TO UNDER 12.3 YEARS	44	23.28	19	14.18	30	26.79
1,303	12.3 TO UNDER 13.8 YEARS	49	25.93	36	26.87	26	23.21
1,295	13.8 YEARS AND OVER	53	28.04	26	19.40	36	32.14
148	NOT APPLICABLE	0	0.00	0	0.00	0	0.00
PCT TCHRS W/ADV DEG (ST AVG=27.3%)							
1,247	UNDER 14.5%	21	11.11	27	20.15	6	5.36
1,263	14.5% TO UNDER 21.3%	26	13.76	23	17.16	16	14.29
1,256	21.3% TO UNDER 28.2%	41	21.69	28	20.98	30	26.79
1,256	28.2% TO UNDER 36.9%	47	24.87	33	24.63	27	24.11
1,263	36.9% AND OVER	53	28.04	21	15.67	33	29.46
358	NOT APPLICABLE	1	0.53	2	1.49	0	0.00
PCT MINORITY TCHRS (ST AVG=23.9%)							
1,159	NONE	18	9.52	22	16.42	9	8.04
1,381	UNDER 5.7%	73	38.62	47	35.07	20	17.86
1,374	5.7% TO UNDER 14.0%	53	28.04	43	32.09	26	23.21
1,372	14.0% TO UNDER 41.2%	30	15.87	18	13.43	20	17.86
1,357	41.2% AND OVER	15	7.94	4	2.99	37	33.04
PCT AFRICAN AM TCHRS (ST AVG=8.1%)							
3,281	NONE	85	44.97	79	58.96	41	36.61
840	UNDER 3.5%	33	17.46	19	14.18	23	20.54
841	3.5% TO UNDER 6.8%	32	16.93	16	11.94	16	14.29
841	6.8% TO UNDER 16.4%	19	10.05	14	10.45	15	13.39
840	16.4% AND OVER	20	10.58	6	4.48	17	15.18
PCT HISPANIC TCHRS (ST AVG=15.1%)							
2,552	NONE	63	33.33	59	44.03	19	16.96
1,022	UNDER 3.8%	55	29.18	20	14.93	29	25.89
1,023	3.8% TO UNDER 8.8%	49	25.93	34	25.37	19	16.96
1,023	8.8% TO UNDER 31.8%	17	8.99	19	14.18	13	11.61
1,023	31.8% AND OVER	5	2.65	2	1.49	32	28.57
AVERAGE TEACHER SALARY							
1,299	UNDER \$28,313	35	18.52	45	33.58	5	4.46
1,299	\$28,313 TO UNDER \$29,853	39	20.63	31	23.13	19	16.96
1,300	\$29,853 TO UNDER \$31,333	40	21.16	23	17.16	20	17.86
1,298	\$31,333 TO UNDER \$33,231	32	16.93	14	10.45	20	25.00
1,299	\$33,231 AND OVER	43	22.75	21	15.67	40	35.71
148	NOT APPLICABLE	0	0.00	0	0.00	0	0.00
AVG. STU/TCHR RATIO (ST AVG=15.6)							
1,299	UNDER 12.6	67	35.45	82	61.19	19	16.96
1,299	12.6 TO UNDER 14.6	56	29.63	24	17.91	22	19.64
1,299	14.6 TO UNDER 16.0	26	13.76	14	10.45	30	26.79
1,299	16.0 TO UNDER 17.4	21	11.11	8	5.97	23	20.54
1,299	17.4 AND OVER	19	10.05	6	4.48	18	16.07
148	NOT APPLICABLE	0	0.00	0	0.00	0	0.00
INSTRUCTIONAL COST/PUPIL							
1,294	UNDER \$2,312	11	5.82	8	5.97	7	6.25
1,295	\$2,312 TO UNDER \$2,563	28	14.81	9	6.72	24	21.43
1,295	\$2,563 TO UNDER \$2,849	39	20.63	22	16.42	29	25.89
1,295	\$2,849 TO UNDER \$3,300	51	26.98	29	21.64	33	29.46
1,294	\$3,300 AND OVER	60	31.75	66	49.25	19	16.96
170	NO INSTRUCTIONAL COSTS	0	0.00	0	0.00	0	0.00
6,644	ALL CAMPUSES	189	100.00	134	100.00	112	100.00

SCHEDULING APPROACHES AMONG SCHOOLS
IN TEXAS HIGH SCHOOL SCHEDULING SURVEY
BY CAMPUS ANALYZE CATEGORY
(DOES NOT INCLUDE ALTERNATIVE CAMPUSES,
SP ED CAMPUSES OR GR 9 ONLY CAMPUSES)

NBR*CAMP	CATEGORY	NUMBER AB BLOCK SCHOOLS BY CATG	PERCENT AB BLOCK SCHOOLS BY CATG	NUMBER MOD AB BLK SCHOOLS BY CATG	PERCENT MOD AB BLOCK SCHOOLS BY CATG	NUMBER ACCEL SCHOOLS BY CATG	PERCENT ACCEL SCHOOLS BY CATG
ENROLLMENT GROUPINGS							
1,341	800 AND OVER	63	43.92	31	23.13	82	73.21
1,167	600 TO UNDER 800	14	7.41	7	5.22	8	7.14
1,525	400 TO UNDER 600	23	12.17	13	9.78	7	6.25
1,376	200 TO UNDER 400	48	25.40	43	32.89	11	9.82
1,234	UNDER 200	21	11.11	40	29.85	4	3.57
PCT MINORITY PUPILS (ST AVG=53.6%)							
1,524	UNDER 20%	62	32.88	49	36.57	30	17.86
1,082	20% TO UNDER 35%	45	23.81	33	24.63	16	14.29
1,241	35% TO UNDER 55%	36	19.05	28	20.90	20	17.86
1,315	55% TO UNDER 85%	28	14.81	19	14.18	19	16.96
1,481	85% AND OVER	18	9.52	5	3.73	37	33.84
PCT AFRICAN AM PUPILS (ST AVG=14.3%)							
1,685	UNDER 1%	45	23.81	37	27.61	33	29.46
1,173	1% TO UNDER 4%	28	14.81	28	20.90	15	13.39
1,276	4% TO UNDER 10%	41	21.69	31	23.13	25	22.32
1,045	10% TO UNDER 20%	34	17.99	14	10.45	18	16.07
1,464	20% AND OVER	41	21.69	24	17.91	21	18.75
PCT HISPANIC PUPILS (ST AVG=36.7%)							
1,238	UNDER 6%	49	25.93	37	27.61	28	17.86
1,328	6% TO UNDER 15%	48	25.40	27	20.15	17	15.18
1,259	15% TO UNDER 30%	40	21.16	30	22.39	18	16.07
1,298	30% TO UNDER 60%	35	18.52	27	20.15	15	13.39
1,528	60% AND OVER	17	8.99	13	9.78	42	37.50
PCT INCREASE IN PUPILS (94/95-95/96)							
1,282	UNDER -4.0%	11	5.82	19	14.18	12	10.71
1,259	-4.0% TO UNDER -0.5%	35	18.52	26	19.40	20	17.86
1,294	-0.5% TO UNDER 2.8%	40	21.16	25	18.66	27	24.11
1,288	2.8% TO UNDER 6.9%	51	26.98	28	20.90	25	22.32
1,269	6.9% AND OVER	51	26.98	36	26.87	27	24.11
259	NEW CAMPUSES	1	0.53	0	0.00	1	0.89
PCT ECON DISADV PUPILS (ST AVG=46.9%)							
1,328	UNDER 21.5%	57	30.16	29	21.64	29	25.89
1,329	21.5% TO UNDER 38.7%	73	38.62	53	39.55	32	28.57
1,354	38.7% TO UNDER 55.7%	40	21.16	33	24.63	14	12.50
1,329	55.7% TO UNDER 78.1%	17	8.99	17	12.69	22	19.64
1,328	78.1% AND OVER	2	1.06	2	1.49	15	13.39
TAAS: PCT PASSING ALL TESTS TAKEN							
1,251	UNDER 52.2%	40	21.16	21	15.67	49	43.75
1,252	52.2% TO UNDER 64.1%	48	25.40	34	25.37	34	30.36
1,241	64.1% TO UNDER 72.5%	49	25.93	36	26.87	16	14.29
1,242	72.5% TO UNDER 80.4%	32	16.93	25	18.66	10	8.93
1,253	80.4% AND OVER	20	10.58	18	13.43	3	2.68
404	TAAS NOT ADMINISTERED	0	0.00	0	0.00	0	0.00
AVERAGE DROPOUT RATE (94-95)							
1,926	UNDER 1.0%	66	34.92	74	55.22	23	20.54
624	1.0% TO UNDER 3.5%	84	44.44	39	29.10	64	57.14
198	3.5% TO UNDER 6.0%	28	14.81	40	14.93	18	16.07
164	6.0% AND OVER	10	5.29	1	0.75	6	5.36
3,731	NOT APPLICABLE	1	0.53	0	0.00	1	0.89
SAT/ACT: PCT TAKING (94-95)							
274	UNDER 40.1%	9	4.76	10	7.46	12	10.71
267	40.1% TO UNDER 57.5%	53	28.04	16	11.94	26	23.21
274	57.5% TO UNDER 67.2%	50	26.46	33	24.63	30	26.79
270	67.2% TO UNDER 78.7%	42	22.22	37	27.61	30	26.79
271	78.7% AND OVER	33	17.46	38	28.36	11	9.82
5,287	NO GRADUATES	2	1.06	0	0.00	3	2.68
SAT/ACT: PCT >= CRITERION (94-95)							
270	UNDER 0.9%	10	5.29	8	5.97	6	5.36
273	0.9% TO UNDER 8.2%	44	23.28	24	17.91	35	31.25
271	8.2% TO UNDER 13.7%	44	23.28	26	19.40	24	21.43
271	13.7% TO UNDER 20.7%	51	26.98	36	26.87	26	23.21
271	20.7% AND OVER	38	20.11	40	29.85	18	16.07
5,287	NO GRADUATES	2	1.06	0	0.00	3	2.68
6,644	ALL CAMPUSES	189	100.00	134	100.00	112	100.00

Appendix B.
Part 2. *Traditional Scheduling Practices*
Among Selected Texas Public High Schools by Campus Characteristics

SCHEDULING APPROACHES AMONG SCHOOLS
IN TEXAS HIGH SCHOOL SCHEDULING SURVEY
BY CAMPUS ANALYZE CATEGORY
(DOES NOT INCLUDE ALTERNATIVE CAMPUSES,
SP ED CAMPUSES OR GR 9 ONLY CAMPUSES)

NBR*CAMP	CATEGORY	NUMBER TRAD 6 SCHOOLS BY CATG	PERCENT TRAD 6 SCHOOLS BY CATG	NUMBER TRAD 7 SCHOOLS BY CATG	PERCENT TRAD 7 SCHOOLS BY CATG	NUMBER TRAD 8 SCHOOLS BY CATG	PERCENT TRAD 8 SCHOOLS BY CATG
CAMPUS TYPE							
3,588	ELEMENTARY SCHOOLS	0	0.00	0	0.00	0	0.00
1,261	MIDDLE & JR. HIGH SCHOOLS	1	1.69	0	0.00	0	0.00
1,393	HIGH SCHOOLS	56	94.92	369	80.74	97	76.38
401	K - 12 SCHOOLS	2	3.39	87	19.04	30	23.62
CAMPUS ACCOUNTABILITY RATING							
394	EXEMPLARY	1	1.69	16	3.50	5	3.94
1,309	RECOGNIZED	8	13.56	120	26.26	38	29.92
4,127	ACCEPTABLE	45	76.27	302	66.08	80	62.99
108	LOW-PERFORMING	5	8.47	18	3.94	4	3.15
309	ALTERNATIVE EDUCATION	0	0.00	0	0.00	0	0.00
396	NOT-RATED	0	0.00	0	0.00	0	0.00
AVG. TEACHER EXPER (ST AVG=11.7 YRS)							
1,299	UNDER 9.3 YEARS	2	3.39	51	11.16	17	13.39
1,299	9.3 TO UNDER 10.9 YEARS	3	5.08	66	14.44	25	19.69
1,299	10.9 TO UNDER 12.3 YEARS	10	16.95	89	19.47	27	21.26
1,303	12.3 TO UNDER 13.8 YEARS	9	15.25	122	26.70	18	14.17
1,295	13.8 YEARS AND OVER	34	57.63	128	28.01	40	31.50
148	NOT APPLICABLE	1	1.69	0	0.00	0	0.00
PCT TCHRS W/ADV DEG (ST AVG=27.3%)							
1,247	UNDER 14.5%	2	3.39	80	17.51	31	24.41
1,263	14.5% TO UNDER 21.3%	1	1.69	89	19.47	27	21.26
1,256	21.3% TO UNDER 28.2%	8	13.56	90	19.69	23	18.11
1,256	28.2% TO UNDER 36.9%	15	25.42	97	21.23	25	19.69
1,263	36.9% AND OVER	32	54.24	95	20.79	20	15.75
358	NOT APPLICABLE	1	1.69	5	1.09	1	0.79
PCT MINORITY TCHRS (ST AVG=23.9%)							
1,159	NONE	2	3.39	101	22.10	32	25.20
1,381	UNDER 5.7%	8	13.56	124	27.13	35	27.56
1,374	5.7% TO UNDER 14.0%	18	30.51	129	28.23	30	23.62
1,372	14.0% TO UNDER 41.2%	17	28.81	53	11.60	24	18.90
1,357	41.2% AND OVER	14	23.73	49	10.72	6	4.72
PCT AFRICAN AM TCHRS (ST AVG=8.1%)							
3,281	NONE	3	5.08	259	56.67	88	69.29
840	UNDER 3.5%	25	42.37	68	14.88	15	11.81
841	3.5% TO UNDER 6.8%	11	18.64	57	12.47	11	8.66
841	6.8% TO UNDER 16.4%	8	13.56	48	10.50	5	3.94
840	16.4% AND OVER	12	20.34	24	5.25	8	6.30
PCT HISPANIC TCHRS (ST AVG=15.1%)							
2,552	NONE	5	8.47	205	44.86	49	38.50
1,022	UNDER 3.8%	20	33.90	71	15.54	20	15.75
1,023	3.8% TO UNDER 8.8%	20	33.90	96	21.01	32	25.20
1,023	8.8% TO UNDER 31.8%	6	10.17	44	9.63	23	18.11
1,023	31.8% AND OVER	8	13.56	40	8.75	3	2.36
AVERAGE TEACHER SALARY							
1,299	UNDER \$28,313	0	0.00	120	26.26	29	22.83
1,299	\$28,313 TO UNDER \$29,853	2	3.39	90	19.69	29	22.83
1,300	\$29,853 TO UNDER \$31,333	7	11.86	104	22.76	19	14.96
1,298	\$31,333 TO UNDER \$33,231	11	18.64	71	15.54	32	25.20
1,299	\$33,231 AND OVER	38	64.41	71	15.54	18	14.17
148	NOT APPLICABLE	1	1.69	0	0.00	0	0.00
AVG. STU/TCHR RATIO (ST AVG=15.6)							
1,299	UNDER 12.6	4	6.78	229	50.11	74	58.27
1,299	12.6 TO UNDER 14.6	4	6.78	120	26.26	22	17.32
1,299	14.6 TO UNDER 16.0	9	15.25	50	10.94	13	10.24
1,299	16.0 TO UNDER 17.4	12	20.34	27	5.91	7	5.51
1,299	17.4 AND OVER	29	49.15	30	6.56	11	8.66
148	NOT APPLICABLE	1	1.69	0	0.00	0	0.00
INSTRUCTIONAL COST/PUPIL							
1,294	UNDER \$2,312	12	20.34	26	5.69	10	7.87
1,295	\$2,312 TO UNDER \$2,563	15	25.42	27	5.91	10	7.87
1,295	\$2,563 TO UNDER \$2,849	13	22.03	72	15.75	21	16.54
1,295	\$2,849 TO UNDER \$3,300	13	22.03	131	28.67	22	17.32
1,294	\$3,300 AND OVER	6	10.17	200	43.76	64	50.39
170	NO INSTRUCTIONAL COSTS	0	0.00	0	0.00	0	0.00
6,644	ALL CAMPUSES	59	100.00	457	100.00	127	100.00

SCHEDULING APPROACHES AMONG SCHOOLS
IN TEXAS HIGH SCHOOL SCHEDULING SURVEY
BY CAMPUS ANALYZE CATEGORY
(DOES NOT INCLUDE ALTERNATIVE CAMPUSES,
SP ED CAMPUSES OR GR 9 ONLY CAMPUSES)

NBR*CAMP	CATEGORY	NUMBER TRAD 6 SCHOOLS BY CATG	PERCENT TRAD 6 SCHOOLS BY CATG	NUMBER TRAD 7 SCHOOLS BY CATG	PERCENT TRAD 7 SCHOOLS BY CATG	NUMBER TRAD 8 SCHOOLS BY CATG	PERCENT TRAD 8 SCHOOLS BY CATG
ENROLLMENT GROUPINGS							
1,341	800 AND OVER	52	88.14	96	21.01	30	23.62
1,167	600 TO UNDER 800	1	1.69	41	8.97	7	5.51
1,525	400 TO UNDER 600	2	3.39	51	11.16	9	7.09
1,376	200 TO UNDER 400	2	3.39	150	32.82	44	34.65
1,234	UNDER 200	2	3.39	118	25.82	37	29.13
PCT MINORITY PUPILS (ST AVG=53.6%)							
1,524	UNDER 20%	5	8.47	173	37.86	48	37.80
1,082	20% TO UNDER 35%	9	15.25	85	18.60	27	21.26
1,241	35% TO UNDER 55%	14	23.73	87	19.04	24	18.90
1,315	55% TO UNDER 85%	16	27.12	62	13.57	22	17.32
1,481	85% AND OVER	15	25.42	49	10.72	6	4.72
PCT AFRICAN AM PUPILS (ST AVG=14.3%)							
1,685	UNDER 1%	6	10.17	160	35.01	68	53.54
1,173	1% TO UNDER 4%	10	16.95	80	17.51	16	12.60
1,276	4% TO UNDER 10%	15	25.42	71	15.54	16	12.60
1,045	10% TO UNDER 20%	10	16.95	68	14.88	14	11.02
1,464	20% AND OVER	18	30.51	77	16.85	13	10.24
PCT HISPANIC PUPILS (ST AVG=36.7%)							
1,238	UNDER 6%	5	8.47	153	33.48	29	22.83
1,328	6% TO UNDER 15%	14	23.73	91	19.91	25	19.69
1,259	15% TO UNDER 30%	18	30.51	71	15.54	30	23.62
1,298	30% TO UNDER 60%	8	13.56	80	17.51	29	22.83
1,520	60% AND OVER	14	23.73	61	13.35	14	11.02
PCT INCREASE IN PUPILS (94/95-95/96)							
1,282	UNDER -4.8%	7	11.86	55	12.04	23	18.11
1,259	-4.8% TO UNDER -0.5%	10	16.95	91	19.91	20	15.75
1,294	-0.5% TO UNDER 2.8%	12	20.34	98	21.44	15	11.81
1,280	2.8% TO UNDER 6.9%	17	28.81	119	26.04	36	28.35
1,269	6.9% AND OVER	12	20.34	93	20.35	33	25.98
259	NEW CAMPUSES	1	1.69	0	0.00	0	0.00
PCT ECON DISADV PUPILS (ST AVG=46.9%)							
1,328	UNDER 21.5%	26	44.07	110	24.07	32	25.20
1,329	21.5% TO UNDER 38.7%	13	22.03	166	36.32	42	33.07
1,329	38.7% TO UNDER 55.7%	9	15.25	98	21.44	37	29.13
1,329	55.7% TO UNDER 78.1%	9	15.25	61	13.35	13	10.24
1,328	78.1% AND OVER	2	3.39	21	4.60	3	2.36
TAAS: PCT PASSING ALL TESTS TAKEN							
1,251	UNDER 52.2%	19	32.20	85	18.60	20	15.75
1,252	52.2% TO UNDER 64.1%	13	22.03	120	26.26	25	19.69
1,241	64.1% TO UNDER 72.5%	12	20.34	105	22.98	32	25.20
1,242	72.5% TO UNDER 80.4%	6	10.17	92	20.13	33	25.98
1,253	80.4% AND OVER	9	15.25	54	11.82	17	13.39
404	TAAS NOT ADMINISTERED	0	0.00	0	0.00	0	0.00
AVERAGE DROPOUT RATE (94-95)							
1,926	UNDER 1.0%	15	25.42	184	40.26	56	44.09
624	1.0% TO UNDER 3.5%	28	47.46	192	42.01	50	39.37
198	3.5% TO UNDER 6.0%	6	10.17	68	14.88	20	15.75
164	6.0% AND OVER	9	15.25	12	2.63	1	0.79
3,731	NOT APPLICABLE	1	1.69	0	0.00	0	0.00
SAT/ACT: PCT TAKING (94-95)							
274	UNDER 40.1%	4	6.78	37	8.10	9	7.09
267	40.1% TO UNDER 57.5%	17	28.81	98	21.44	35	27.56
274	57.5% TO UNDER 67.2%	5	8.47	104	22.76	21	16.54
270	67.2% TO UNDER 78.7%	12	20.34	99	21.66	29	22.83
271	78.7% AND OVER	17	28.81	110	24.07	32	25.20
5,287	NO GRADUATES	4	6.78	8	1.75	1	0.79
SAT/ACT: PCT >= CRITERION (94-95)							
270	UNDER 0.9%	2	3.39	48	10.50	8	6.30
273	0.9% TO UNDER 8.2%	11	18.64	96	21.01	34	26.77
271	8.2% TO UNDER 13.7%	11	18.64	118	25.82	28	22.05
271	13.7% TO UNDER 20.7%	4	6.78	94	20.57	29	22.83
271	20.7% AND OVER	27	45.76	92	20.13	27	21.26
5,287	NO GRADUATES	4	6.78	8	1.75	1	0.79
6,644	ALL CAMPUSES	59	100.00	457	100.00	127	100.00

Appendix B.

Part 3. Texas Education Agency

1996-97 Campus Analyze Category Descriptions

CAMPUS TYPE

Campuses are classified into four categories based on the range of grades offered. Total membership as reported to the Texas Education Agency (TEA) is used to construct grade ranges. The categories are:

1. Elementary Schools
2. Middle and Junior High Schools
3. High Schools
4. K-12 Schools

CAMPUS ACCOUNTABILITY RATING

This category refers to the campus rating based on the 1997 accountability system. A campus' rating is based on performance on the Texas Assessment of Academic Skills (TAAS), the dropout rate, and the attendance rate. The four levels of accountability ratings for campuses and the general conditions of each of the criteria are as shown:

1997 Rating	TAAS Passing	Dropout Rate	Attendance Rate
Exemplary	>=90%	<=1.0%	>=94%
Recognized	>=75%	<=3.5%	>=94%
Acceptable	>=35%	<=6.0%	>=94%
Low-Performing	<35%	>6.0%	>=94%

Some campuses are shown as "Alternative Education," "Not Rated," or "Not Applicable." Campuses classified as "Alternative Education" are evaluated separately under an alternative education accountability system. "Not Rated" campuses include those that do not serve students within the 1st through 12th grade span, such as prekindergarten centers and early education through kindergarten schools, as well as schools that serve only students in special education. "Not Applicable" campuses are those with insufficient data to evaluate and first-year charter schools.

AVERAGE TEACHER EXPERIENCE

A six-category grouping of average teacher experience years computed as total professional experience years for all campus teachers divided by the total teacher full-time equivalent (FTE) count. The sixth category, "Not Applicable," is reserved for campuses reporting enrollment but not teachers.

PERCENT OF TEACHERS WITH ADVANCED DEGREES

A six-category grouping by district percentage of teachers with advanced degrees computed as the FTE count of teachers with master's or doctoral degrees divided by the total teacher FTE count. The sixth category is reserved for campuses with unreported teacher FTEs or campuses with no teachers with advanced degrees.

PERCENT MINORITY, AFRICAN AMERICAN, AND HISPANIC TEACHERS

Three five-category sets of groupings based on the ethnic composition of campus teacher populations, as reported on the Public Education Information Management System (PEIMS). Minority percent is calculated as the sum of all non-White populations expressed as a percentage of the total. Non-White populations include American Indian or Alaskan Native; Asian or Pacific Islander; African American, not of Hispanic origin; and Hispanic.

AVERAGE TEACHER SALARY

A six-category grouping by average campus teacher salary computed as the total salary of teachers divided by the total teacher FTE count. Total salary amount does not include any other supplement. The sixth category, "Not Applicable," is reserved for campuses reporting enrollment but not teachers.

AVERAGE STUDENT/TEACHER RATIO

A six-category grouping by average student/teacher ratio computed as the total number of students at each campus divided by the total teacher FTE count at the campus. The sixth category, "Not Applicable," is reserved for campuses reporting enrollment but not teachers.

INSTRUCTIONAL COST PER PUPIL

A six-category grouping of campuses based on the instructional cost per pupil. Instructional costs are the sum of expenditures budgeted for all activities dealing directly with the instruction of pupils, including instruction through the use of computers. The per pupil amounts are the current school year budgeted expenditures divided by the current number of students in membership. The source for budgeted expenditures is the fall PEIMS submission.

ENROLLMENT GROUPINGS

A five-category grouping based on the total number of students enrolled by campus as of the PEIMS fall collection date (late October of each year). Enrollment excludes students who are served by the campus but not in membership at that campus.

PERCENT MINORITY, AFRICAN AMERICAN, AND HISPANIC STUDENTS

Three five-category sets of groupings based on the ethnic composition of campus student populations, as reported on PEIMS. Minority percent is calculated as the sum of all non-White populations expressed as a percentage of the total. Non-White populations include American Indian or Alaskan Native; Asian or Pacific Islander; African American, not of Hispanic origin; and Hispanic.

PERCENT INCREASE IN PUPILS (95/96 - 96/97)

A six-category grouping of campuses based on the growth or decline in student population over a one-year period. The sixth category, "New Campuses," is reserved for campuses reporting students in the fall of 1996 for the first time.

PERCENT ECONOMICALLY DISADVANTAGED PUPILS

A five-category grouping based on the campus percentage of enrolled students classified as economically disadvantaged on PEIMS as follows:

- a) eligible for free or reduced-price meals under the National School Lunch and Child Nutrition Program;
- b) from a family with annual income at/below the federal poverty line;
- c) eligible for Aid to Families with Dependent Children (AFDC) or other public assistance;
- d) recipient of a Pell Grant or comparable state need-based financial assistance program; or
- e) eligible for programs assisted under Title II of the Job Training Partnership Act.

TAAS: PERCENT PASSING ALL TESTS TAKEN (96-97)

A six-category grouping of campuses based on the percentage of students passing the TAAS. For Grades 3-8 and 10, the total number of students passing all sections taken of the TAAS is expressed as a percentage of the total number of students taking one or more tests. This percentage (a) excludes students taking the test in Spanish and special education students; and (b) includes only those students enrolled in the district in October of the school year, which is the percentage used for accountability purposes. The sixth category is reserved for campuses not administering the test.

AVERAGE DROPOUT RATE (95-96)

A five-category grouping of campuses based on the total number of dropouts in Grades 7-12 expressed as a percentage of the total number of students in membership in Grades 7-12. The fifth category, "Not Applicable," is reserved for elementary grade level campuses.

SAT I/ACT: PERCENT TAKING (95-96)

A six-category grouping based on the percentage of 1995-96 graduates taking the SAT I and/or the ACT Assessment. The sixth category is reserved for campuses that had no graduates.

SAT I/ACT: PERCENT SCORING AT OR ABOVE CRITERION (95-96)

A six-category grouping based on the percentage of 1995-96 examinees who scored at or above the criterion (1110 on the SAT I Total and/or 24 on the ACT Composite) for the SAT I and/or ACT. The number meeting the criterion is divided by the number of examinees. The sixth category is reserved for campuses that had no examinees.

Appendix C.

Description of Student Performance by Type of High School Schedule

In the following paragraphs, student performance on selected measures is briefly described in relation to different types of high school schedules. In no case was variation in performance on the particular measure statistically significant when school context was held constant and multiple performance measures were examined at the same time.

Dropout rates. The average dropout rate was highest among schools on accelerated block schedules (2.2%) and lowest among schools on modified A/B block schedules (1.4%) (see Figure C-1 on page 51). Statewide, the annual dropout rate for Grades 7-12 was 1.8 percent.

Grade-level retention rates. At 10.9 percent, the average grade-level retention rate in 1995-96 was highest among schools on six-period days (see Figure C-1 on page 51). High schools using modified A/B block schedules had an average retention rate of only 3.7 percent. Statewide, the grade-level retention rate among high school campuses in 1995-96 was 9.7 percent.

TAAS, all tests taken (reading, mathematics, and writing). In spring 1997, high schools using modified A/B block schedules posted the highest average percentage (74.5%) of 10th-grade students (reported as of the PEIMS fall collection date in late October) who passed all TAAS tests taken (see Figure C-2 on page 51). The smallest average percentage (64.3%) was observed among schools using accelerated block schedules. Statewide, 67.8 percent of all 10th-graders in the October subset passed all TAAS tests taken.

TAAS mathematics. Statewide, 72.6 percent of all 10th-graders in the October subset passed the mathematics portion of TAAS. Of the schools included in the analysis, those on eight-period days had the highest average passing rate for the test (79.0%) (see Figure C-2 on page 51). High schools using accelerated block schedules showed the poorest average performance (70.3%).

TAAS reading. A total of 86.1 percent of 10th-graders statewide passed the reading portion of TAAS in spring 1997. In the analysis, high schools using modified A/B block schedules had the highest average passing rate for the test (90.1%), while those using accelerated block schedules had the lowest average passing rate (83.2%) (see Figure C-2 on page 51).

TAAS writing. In spring 1997, 88.5 percent of 10th-graders statewide passed the writing portion of TAAS. On average, high schools on modified A/B block schedules performed best on the TAAS writing test (92.5% passing), while those on accelerated block schedules performed the worst (86.2% passing) (see Figure C-2 on page 51).

Comparable improvement quartiles. Comparable improvement quartiles help gauge how well students in a particular school are learning (i.e., the value added to students' academic skills) when the school's aggregate performance is compared to that of the most demographically similar schools in the state. This information was of particular interest since the multivariate analysis showed that school context was closely related to aggregate student performance.

Specifically, 30.3 percent of high schools on eight-period days were in the top quartile (Q1) for TAAS reading (see Figure C-3 on page 52). In contrast, only 21.8 percent of schools on A/B block schedules were in Q1 for reading. Schools on accelerated block schedules were just behind those on seven-period days in terms of percentages earning Q1 for TAAS reading (26.3% and 26.9%, respectively).

In mathematics, 33.9 percent of the high schools on eight-period days were in Q1. High schools on accelerated block schedules were close behind, with 31.6 percent having earned Q1 in mathematics while schools on six-period days accounted for the lowest percentage (20.3%). (Comparable improvement is not calculated for writing.)

When the percentages in Q4 for reading and mathematics were examined by high school schedule type, again "best" and "worst" cases were of great interest (see Figure C-4 on page 52). Schools on six-period days were least often grouped in Q4 for either reading (8.5%) or mathematics (18.6%). On a percentage basis, high schools using traditional seven-period days were most often in Q4 for TAAS reading (26.5%) while those on modified A/B block schedules were most often in Q4 for TAAS mathematics (29.6%).

These data reinforce the importance of examining performance in more than one way, in addition to considering key context characteristics, before attempting to discern benefits or weaknesses of various approaches to structuring the school day. Local educators' primary goals for their students should help determine what aspects of performance are most important to examine in relation to the type of schedules they wish to use.

SAT/ACT participation and performance. Statewide, 64.7 percent of graduating seniors in 1995-96 took at least one of these two college admissions tests. High schools on modified A/B block schedules had the highest average participation rate for the two admissions tests (66.9%) (see Figure C-5 on page 53). In contrast, high schools using accelerated block schedules had the lowest average participation rate for the tests (61.0%).

In the Texas integrated accountability system, performance on college admissions tests is reported and acknowledged in terms of the percentages of examinees who scored at or above a predetermined criterion score on either the SAT or the ACT tests. For 1995-96 examinees statewide, 26.3 percent

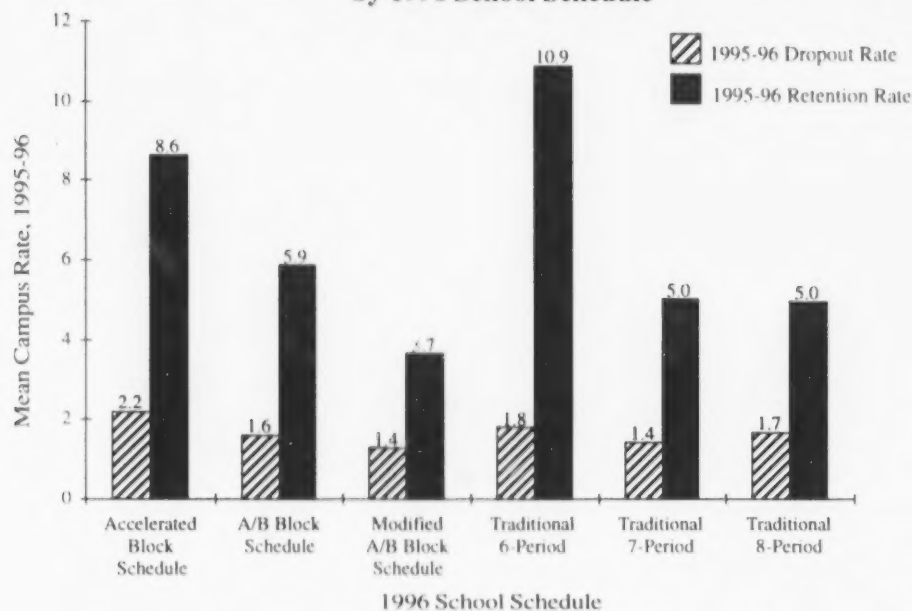
scored at or above these criterion scores. When examined by type of schedule, schools on six-period days in 1996-97 had the highest average percentage of examinees who scored at or above criterion on college admissions tests (25.4%) (see Figure C-6 on page 53). The lowest average percentage of examinees scoring at or above criterion (17.7%) was found among schools on accelerated block schedules.

Advanced Placement exam participation and performance. In 1996-97, 8.5 percent of students in 11th and 12th grades in Texas public schools took one or more AP examinations. Schools on modified A/B block schedules had the highest average participation rate for the AP examination (11.0%). At 6.3 percent, schools on accelerated block schedules had the lowest average participation rate for the examination.

School-level AP performance is reported in the Academic Excellence Indicator System (AEIS) in two ways: (a) the percentage of 11th- and 12th-grade examinees earning a score of at least 3, and (b) the percentage of exam scores of 3 or better (note that individual students may attempt AP examinations in more than one subject in any given year). The latter measure was used in this analysis because it more closely parallels performance on college admissions tests (see Figure C-7 on page 54). Statewide, 61.7 percent of examinees earned scores of 3 or better. High schools on six-period days had the highest average percentage of examinees who performed this well on AP examinations (59.7%), while schools on eight-period days had the lowest average percentage (40.4%).

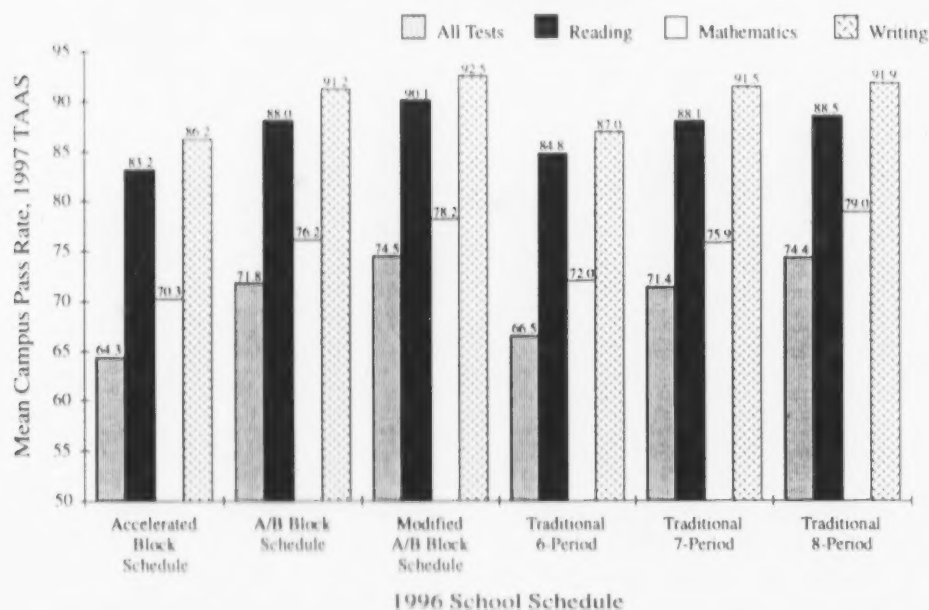
Advanced course completions. In 1995-96, a total of 17.3 percent of students in Grades 9-12 completed advanced courses identified in the state's AEIS glossary. On average, the advanced course completion rate was highest for high schools using modified A/B block schedules (19.6%) and lowest for high schools on traditional seven-period days (16.4%).

Figure C-1.
Mean Campus Dropout and Retention Rates for the 1995-96 School Year
by 1996 School Schedule



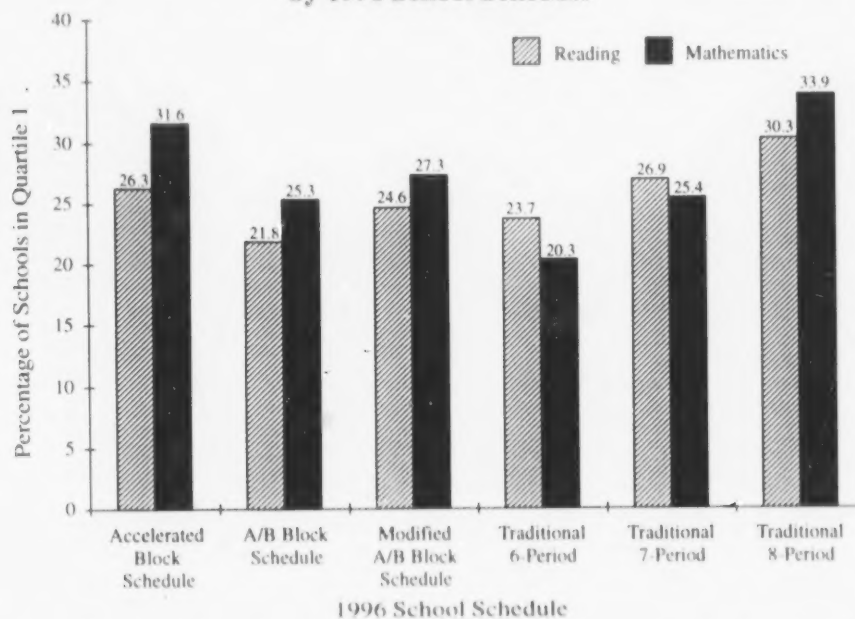
Source: Office of Texas High School Education, Region 13 Education Service Center, survey of Texas public high school schedules; Texas Education Agency (TEA) Public Education Information Management System (PEIMS), 1995-96; TEA PEIMS, 1996-97.

Figure C-2.
Mean Campus Pass Rates for the 1997 Texas Assessment of Academic Skills (TAAS)
by 1996 School Schedule



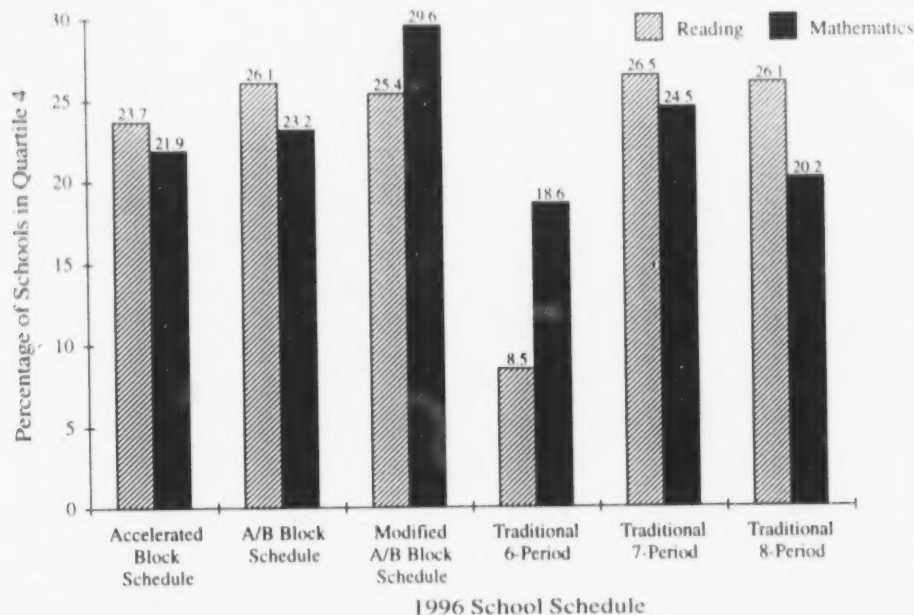
Source: Office of Texas High School Education, Region 13 Education Service Center, survey of Texas public high school schedules, TAAS 1996-97 spring tests.

Figure C-3.
Percentages of Schools in Quartile 1 of Comparable Improvement Groups
by 1996 School Schedule



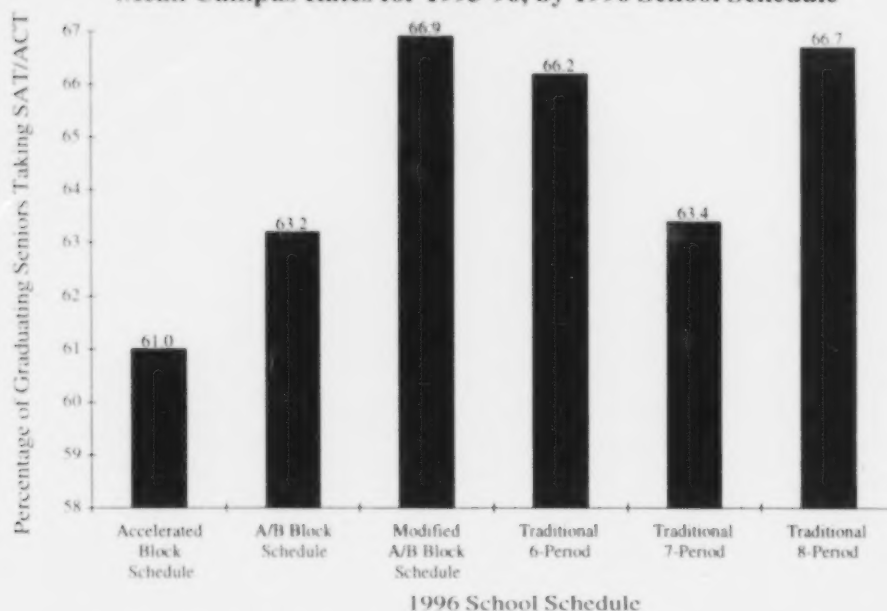
Source: Office of Texas High School Education, Region 13 Education Service Center, survey of Texas public high school schedules; Texas Education Agency (TEA) Public Education Information Management System (PEIMS), 1996-97.

Figure C-4.
Percentages of Schools in Quartile 4 of Comparable Improvement Groups
by 1996 School Schedule



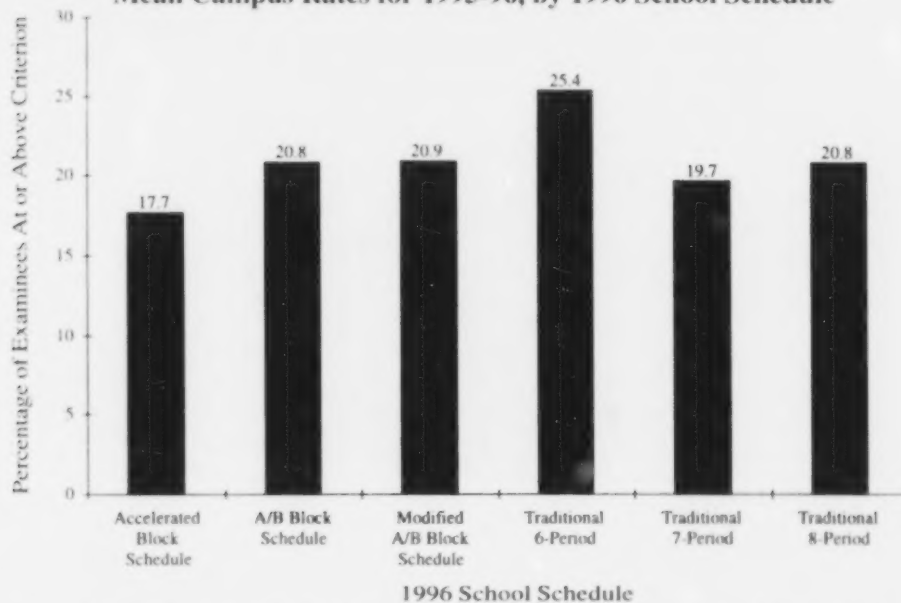
Source: Office of Texas High School Education, Region 13 Education Service Center, survey of Texas public high school schedules; Texas Education Agency (TEA) Public Education Information Management System (PEIMS), 1996-97.

Figure C-5.
Percentages of Graduating Seniors Taking SAT/ACT Tests,
Mean Campus Rates for 1995-96, by 1996 School Schedule



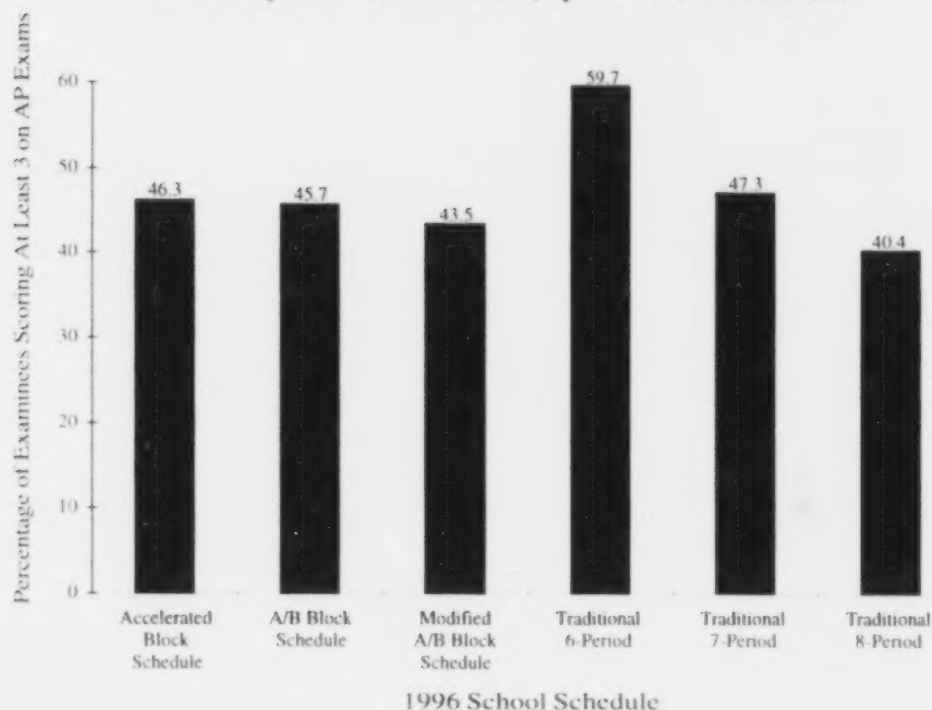
Source: Office of Texas High School Education, Region 13 Education Service Center, survey of Texas public high school schedules; Texas Education Agency (TEA) Public Education Information Management System (PEIMS), 1995-96; College Entrance Examination Board (SAT I test data for 1995-96); ACT, Inc. (ACT test data for 1995-96).

Figure C-6.
Percentages of Examinees Scoring At or Above Criterion on SAT/ACT,
Mean Campus Rates for 1995-96, by 1996 School Schedule



Source: Office of Texas High School Education, Region 13 Education Service Center, survey of Texas public high school schedules; Texas Education Agency (TEA) Public Education Information Management System (PEIMS), 1995-96; College Entrance Examination Board (SAT I test data for 1995-96); ACT, Inc. (ACT test data for 1995-96).

Figure C-7.
Percentages of Examinees Scoring At Least 3 on AP Exams,
Mean Campus Rates for 1996-97, by 1996 School Schedule



Source: Office of Texas High School Education, Region 13 Education Service Center, survey of Texas public high school schedules; College Entrance Examination Board (AP test data for 1996-97).

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